JANUARY 16, 1943

Railway Age

Founded in 1856

SELF SEALED WINE CAST STEEL HOPPER FRAMES

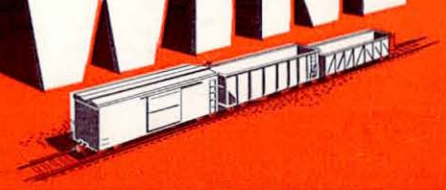
McCARTNEY LIBRARY
GENEVA COLLEGE

MINIMUM CORROSION
MAXIMUM STRENGTH
NO LOSS OF LADING

NEW
MASTER DOOR LOCK

THE WINE RAILWAY APPLIANCE CO.
TOLEDO, OHIO

WINE



CHILLED CAR WHEELS HELP "Pass the Ammunition"

A veritable flood of war materiel is pouring from American factories. The transportation of these finished tools of war and the enormous quantity of vital raw materials necessary in their production, depends almost entirely upon the railroads. Never before have the railroads produced so much transportation – under so much pressure! Chilled Car Wheels help keep freight cars rolling. ● More than 15,000,000 Chilled Car Wheels are now in freight service ● With 38 foundries strategically located in the United States and 8 in Canada, the railroads are assured of quick delivery and reduced wheel delivery costs. ● Under our unique wheel exchange plan, by which you receive new wheels for old on a conversion charge basis, scrapped chilled wheels are speedily melted and recast into new and better wheels. Thus, vital material is conserved, delivery of new Chilled Car Wheels is expedited, defense production is accelerated and Victory hastened.

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

230 PARK AVENUE,
NEW YORK, N. Y.

445 N. SACRAMENTO BLVD.,
CHICAGO, ILL.

AMCCW

ORGANIZED TO ACHIEVE:
Uniform Specifications
Uniform Inspection
Uniform Product

3196

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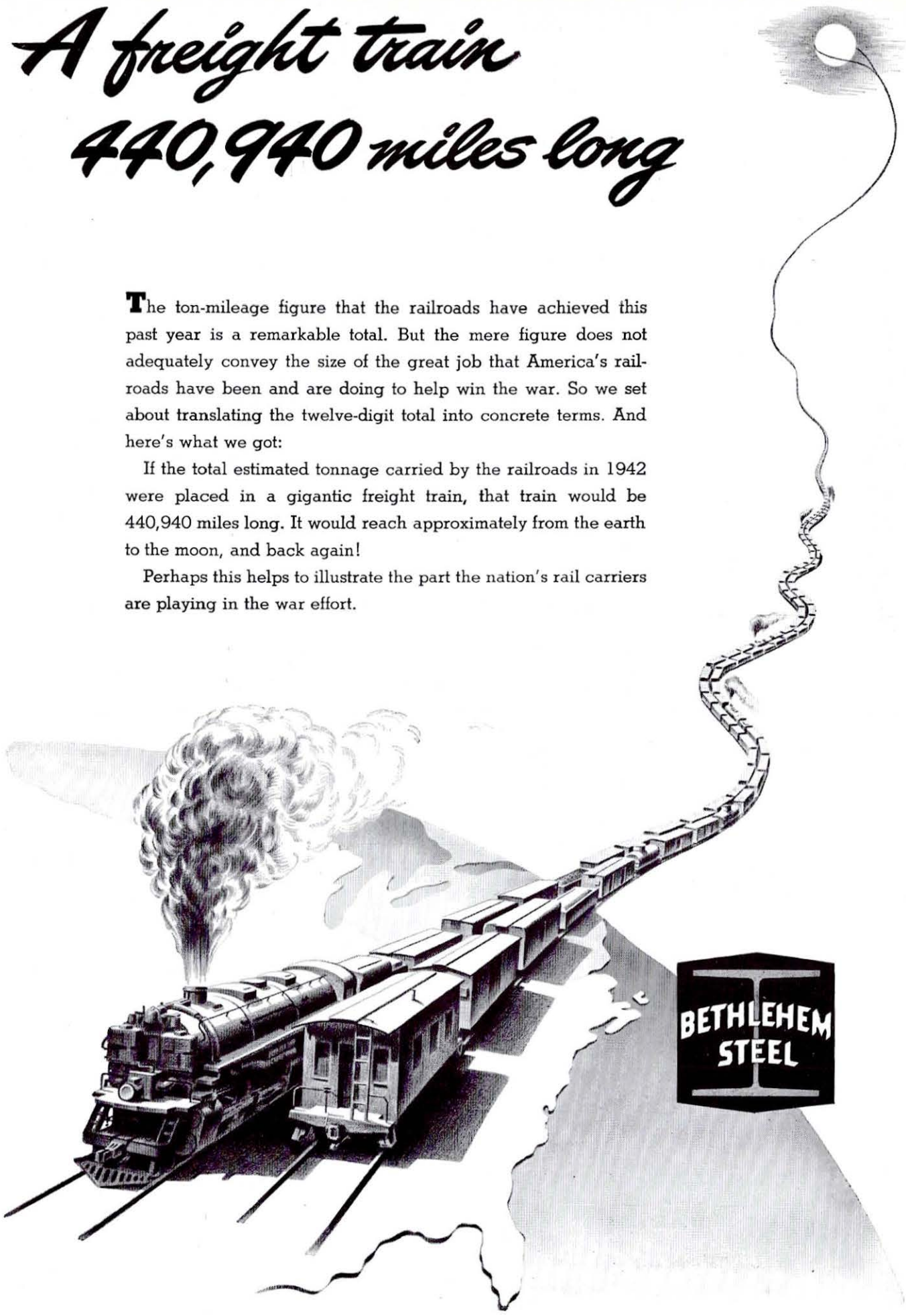
A freight train 440,940 miles long

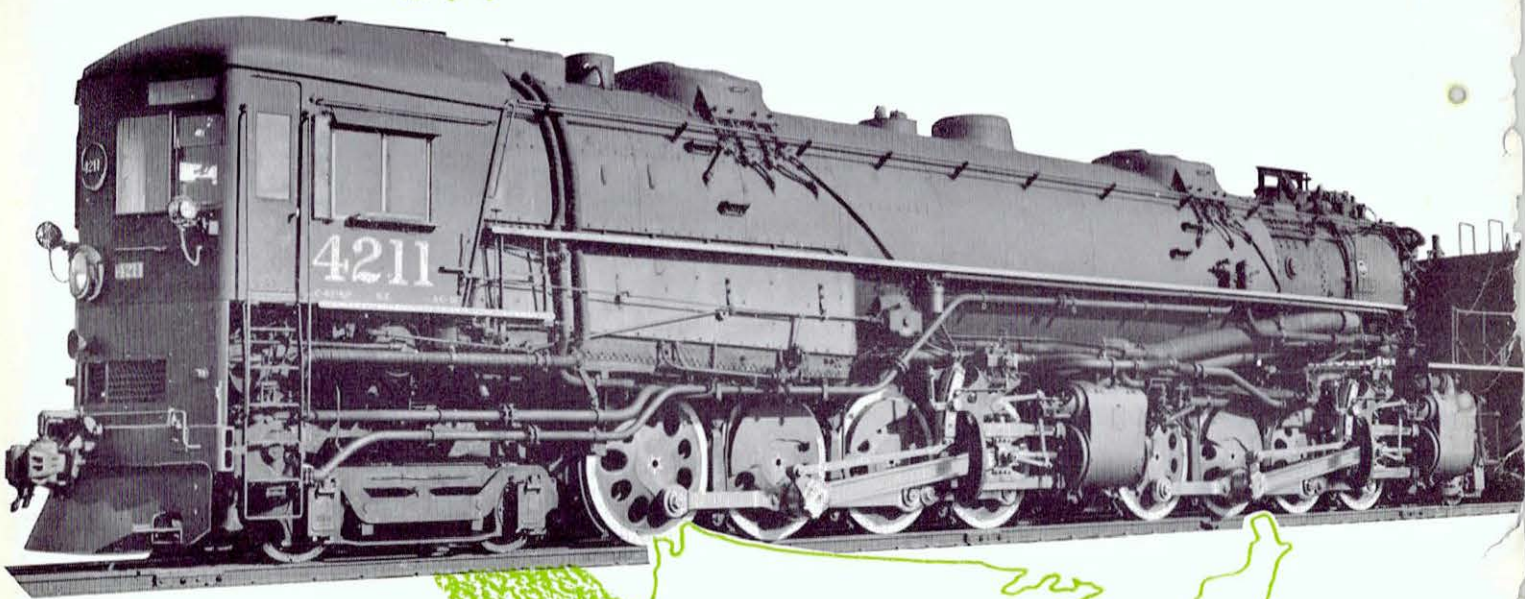
The ton-mileage figure that the railroads have achieved this past year is a remarkable total. But the mere figure does not adequately convey the size of the great job that America's railroads have been and are doing to help win the war. So we set about translating the twelve-digit total into concrete terms. And here's what we got:

If the total estimated tonnage carried by the railroads in 1942 were placed in a gigantic freight train, that train would be 440,940 miles long. It would reach approximately from the earth to the moon, and back again!

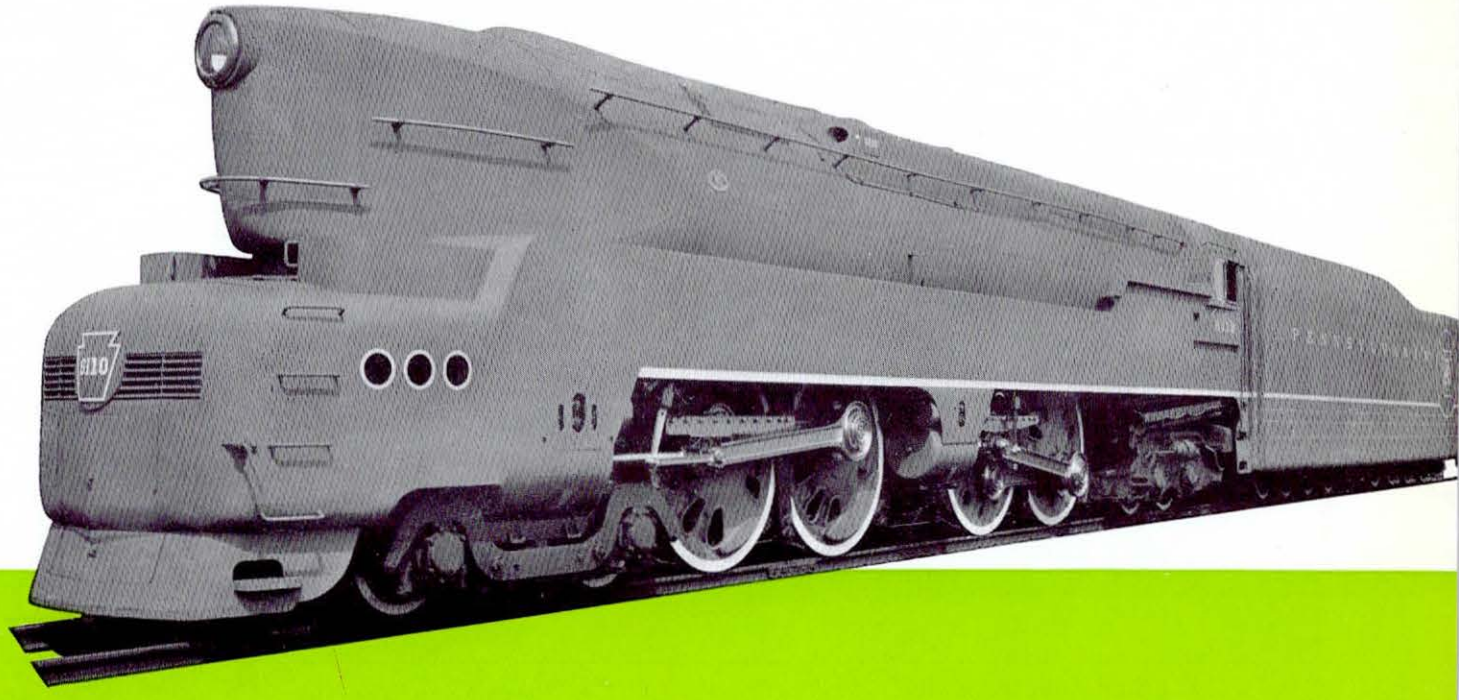
Perhaps this helps to illustrate the part the nation's rail carriers are playing in the war effort.



Modern Baldwin power serves the East and West coasts



BALDWIN
SERVES THE NATION
WHICH THE RAILROADS
HELPED TO BUILD



In the East

On the Pennsylvania Railroad's Harrisburg to Chicago run, the streamlined Baldwin-built 4-4-4-4 type locomotive "T 1" makes its 713-mile trip with only one stop for fuel. It carries 19,500 gallons of water, 41 tons of coal, and is designed to operate on any part of the Pennsylvania Railroad system.

In the West

On the Southern Pacific lines, Baldwin-built 4-8-8-2 locomotives are used on the heavy grades of the Sierra Nevada and other mountainous parts of the system. East bound, over the Sierras, three of these locomotives handle trains of 100 cars, at high speeds and on regular schedules.

These are but two examples of the service which thousands of Baldwin locomotives are delivering to the railroads of America—helping them to haul the men and materials so vital to Victory. In addition, Baldwin facilities and resources are devoted to the task of building tanks, guns and other materiel for our armed forces.

BLW THE BALDWIN GROUP

THE

BALDWIN

LOCOMOTIVE WORKS

Philadelphia

Like the war itself, the rules, regulations and rates covering war shipments are constantly changing.

These may cause you some bewilderment.

And you don't want to hold up a war shipment a minute!

What to do? Get in touch with your nearest Pennsylvania Railroad Freight Traffic Representative immediately. He has all the facts, the latest up-to-the-minute information.

He can tell you precisely what it all means, what to do, how to save time, avoid delays.

For, you see, both our Freight and Passenger Traffic Departments are now strictly *war service organizations.* It's our job—and our privilege—to help industry, the Army, the Navy, the public on all traffic problems related to the war effort.

So, if *you* are confronted with a traffic problem—now or in the future—signal us! We want to help—because there is a war to be won!

Pennsylvania Railroad

SERVING THE NATION

BUY UNITED STATES WAR BONDS AND STAMPS

YOU KEEP IT, SOLDIER!

A lonely, newly inducted selectee sat in a midwestern train's dining car. He was in khaki uniform and didn't act prosperous.

With professional deftness a dining-car waiter called the young warrior's attention to a ninety-cent meal on the day's luncheon card.

After the selectee had finished his meal he produced his meal-allowance dollar—offered the waiter the ten cents change.

"Excuse me, soldier," softly said the waiter as he diplomatically declined to accept the dime. "I'd rather not take tips from our fighting men."

The young fellow in khaki glanced up and grinned at the colored man in a waiter's uniform. "O.K.," said the soldier. "Thanks for thinking of me, just that way."

National spirit, more than a small piece of money, was involved in that touch of American democracy.

Prince Gray is a veteran dining-car waiter and his name sure fits him. "You have to be pretty quick at sizing up people if you want to last long as a dining-car waiter," Prince admitted when I asked him about serving the country's service men. "You might offend some of the road's patrons unless you're quiet and courteous about declining a tip."

Prince has been serving dining-car meals since 1913, except for his enlistment in the Fifteenth Infantry under Colonel "Bill" Hayward during the first World War. One of Prince Gray's brothers was killed in action with the French field artillery. Another brother returned from the French front badly gassed.

"My son is Second Lieutenant Arthur Gray of the 'A' Coast Artillery, stationed abroad. Two cousins and three nephews are also in United States military service over there," Prince explains.

"That's why no soldier, sailor, or marine will be offended when I quietly say to him, '*You're* ready to die for your country. *My* job, in this war, is to stand behind you, serve you extra portions of food if you'll eat them, and see that you get your discount if you're traveling on furlough. Asking you to keep my tip money is the littlest thing I can do for you.'

"I've traveled and served my countrymen from coast to coast. I know a great many of our 18,000 dining-car waiters and I know they feel just as I do about really giving service to our service men.

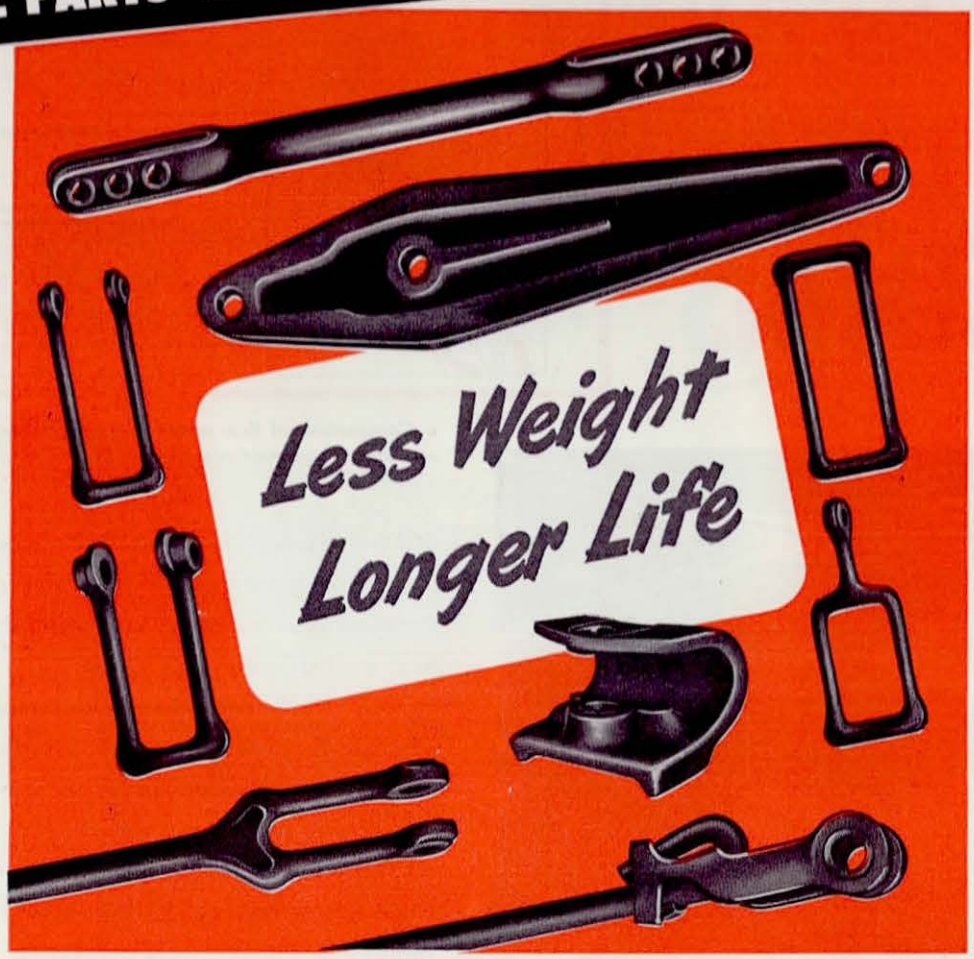
"If a service man realizes that we—who merely stand and wait—want to do every little bit we can to help our soldiers win this war, he'll be glad to take a tip from a dining-car waiter."

— *The Trackwalker*

AMERICAN LOCOMOTIVE • GENERAL ELECTRIC

113-7-9500

VITAL PARTS OF YOUR EQUIPMENT-REPAIR PROGRAM



With the manpower situation growing more critical, railroads are inaugurating a regular equipment-repair program. Cars are watched and when brake equipment shows the need for replacement of parts, Schaefer Forged Steel Foundation Brake Gear Appliances should be used to remove liability of breakage and to lengthen service life.

Schaefer EQUIPMENT COMPANY

KOPPERS BUILDING • PITTSBURGH, PA.

DROP-FORGED FOR LIGHT WEIGHT, HIGH STRENGTH, LONG LIFE AND SAFETY

YOU KEEP IT, SOLDIER!

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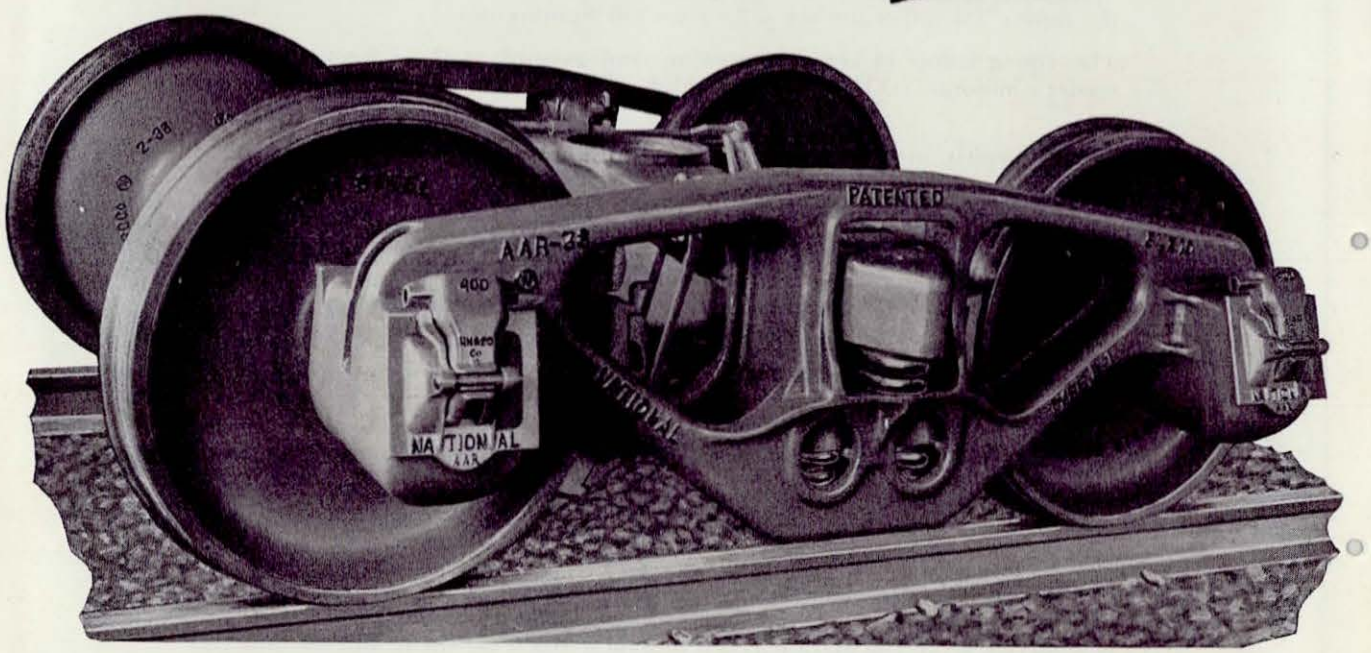
AMERICAN LOCOMOTIVE • GENERAL ELECTRIC

113-7-9600

NATIONAL B-1 TRUCK WITH DUAL CONTROL



Smooth Riding & Safety at high speed

Spring oscillations controlled by built in Snubbers

Self Squaring

No Spring Loss Spring Plates not required

Quickest Wheel Change

Specify National B-1 Trucks with Dual Control

They meet all A.A.R. requirements

NATIONAL MALLEABLE AND STEEL CASTINGS CO.

General Offices: CLEVELAND, OHIO

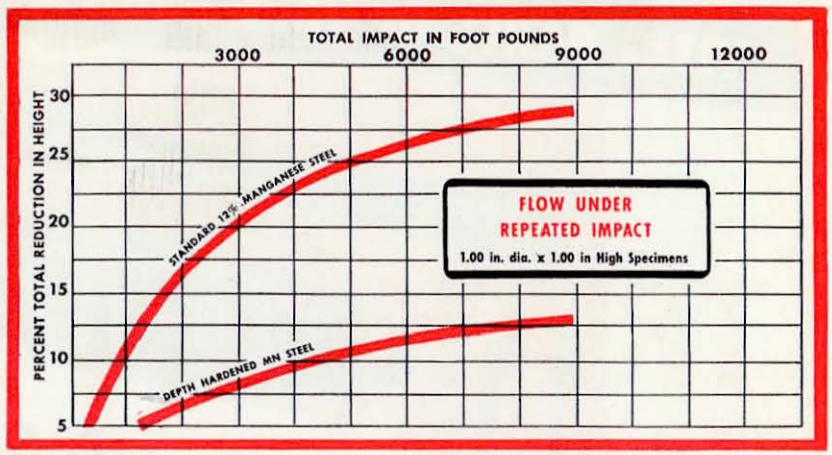
Sales Offices: New York, Philadelphia, Chicago, St. Louis, San Francisco

Works: Cleveland, Chicago, Indianapolis, Sharon, Pa., Melrose Park, Ill.

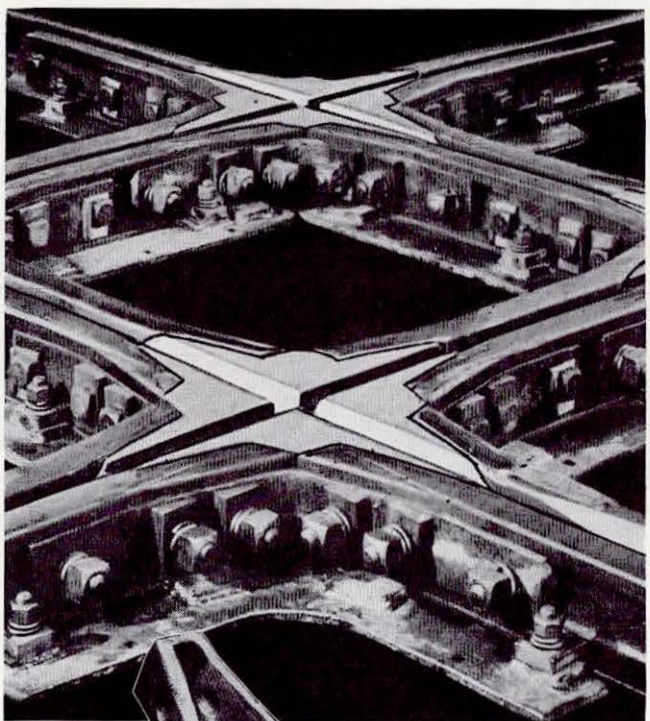
Canadian Representatives: Railway and Power Engineering Corporation, Ltd., Toronto and Montreal

Here's Another Way to...

CONSERVE VITAL METAL



• *Comparison of flow under repeated impact of standard and depth-hardened manganese steel.*



• *Racor Depth-Hardened Crossing.*

• *Underside of intersection showing anvil which protects casting from excess stresses during depth-hardening process.*

3201

An analysis of the illustrated laboratory chart, showing the comparison of flow under repeated impact of standard and Ramapo Ajax depth-hardened manganese steel crossings, will reveal:

The 11 per cent reduction in the one inch specimen of depth-hardened amounts to less than ⅛-inch, while the 27 per cent reduction for the standard manganese amounts to more than ¼-inch. In the field the same results have been found in hundreds of measurements. Field experience has also demonstrated that after this initial flow, either type of manganese will cease to flow.

As the running surface of a crossing will normally wear at least 1/16th-inch, this would leave a scant 1/16th-inch drop at the intersection on the depth hardened, as against a full 3/16-inch for the standard manganese. This difference is sufficient to cause shattering blows when rapidly moving wheels pass over the standard manganese crossing, causing the corners to spall and subjecting the balance of the crossing to terrific stresses because of the bouncing effect of rapidly moving wheels.

We will gladly furnish detailed information.

THE AMERICAN
Brake Shoe
AND FOUNDRY COMPANY

RAMAPO AJAX DIVISION

VITAL PARTS OF YOUR EQUIPMENT-REPAIR PROGRAM

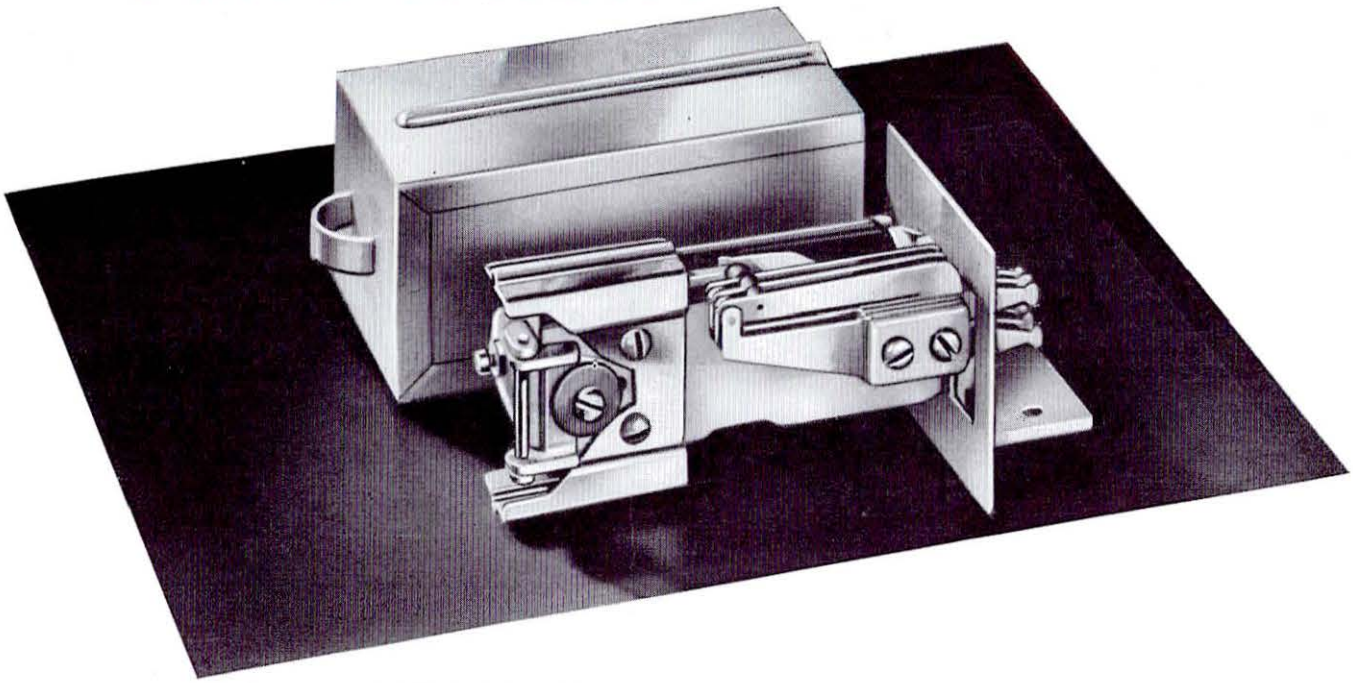
With the manpower situation growing more critical, railroads are inaugurating a regular equipment-repair program. Cars are watched and when brake equipment shows the need for replacement of parts, Schaefer Forged Steel Foundation Brake Gear Appliances should be used to remove liability of breakage and to lengthen service life.

Schaefer EQUIPMENT COMPANY

KOPPERS BUILDING • PITTSBURGH, PA.

DROP-FORGED FOR LIGHT WEIGHT, HIGH STRENGTH, LONG LIFE AND SAFETY

Take THIS...



Automatic Electric Relay

It is only 4 inches long, 1¼ inch high, and about 2 inches wide. It is simply designed, sturdily built. It offers you a choice of features to meet your specific requirements:

Coil—for operation on battery, or on commercial voltages

Contacts—any number from one to twenty, and in any combinations

Contact Points—many different types and sizes, for various operating and atmospheric conditions

Operating Speeds—high-speed, or slow-operate or slow-release, or both

Mountings—Choice (1) angle bracket; (2) relay-rack or other group mountings; (3) "plug-in" mounting; (4) glass-and-plastic case, with terminations to AAR specifications

Complete information in this big book—ask for "Catalog 4071C"

This relay will do many of your jobs in electrical control. And it is only one of more than forty types bearing the Automatic Electric name.

Other Automatic Electric products include Stepping Switches, Keys and Push-buttons, Dials, Cords and Plugs, and many other control devices offering you new freedom in the use of electrical control.

AUTOMATIC ELECTRIC

MAKERS OF TELEPHONE, SIGNALING AND COMMUNICATION APPARATUS
ELECTRICAL ENGINEERS, DESIGNERS AND CONSULTANTS

Distributors: AMERICAN AUTOMATIC ELECTRIC SALES COMPANY, 1033 W. Van Buren St., Chicago, Illinois
In Canada: Canadian Telephones & Supplies Limited, Toronto. Sales and Service Offices in Principal Cities.

TWO YEARS BEFORE

Two years before Pearl Harbor the American Car and Foundry Company was already at work building light combat tanks – and a few days before Dunkerque the first of these rumbled down the highway to the Aberdeen Proving Grounds for its acceptance tests.

It was not by chance that **A.C.F.** became the first civilian builder of light tanks. The management of **A.C.F.** – perhaps because of their own personal leadership of **A.C.F.**'s munition work during World War I – saw early in '39 that the war pattern was again forming.

Knowing that the railroads were of first importance to any war effort, **A.C.F.** took every precaution to ensure its availability as a source of supply of railroad equipment. To this end it set about creating, from its own funds and for its own account, special war work facilities – facilities which, to date, have cost more than eleven million dollars.

On October 3, 1939, the call came – a contract for the building of 329 light combat tanks. The first of these tanks was delivered in April, 1940 – a record performance. Since then, **A.C.F.** has built such tanks to a total of many thousands – and **A.C.F.**-built M-3 tanks are now on active service the world around.

In the building of these tanks, **A.C.F.** became the world's largest manufacturer of case-carburized armor plate – supplying its own needs and those of many other builders of armored vehicles. Large caliber artillery shells and demolition bombs, shell fuses and chemical containers, mine-sweepers and sub-chasers, landing barges and tank lighters, and a vast quantity of other articles, round out **A.C.F.**'s specialized war activities.

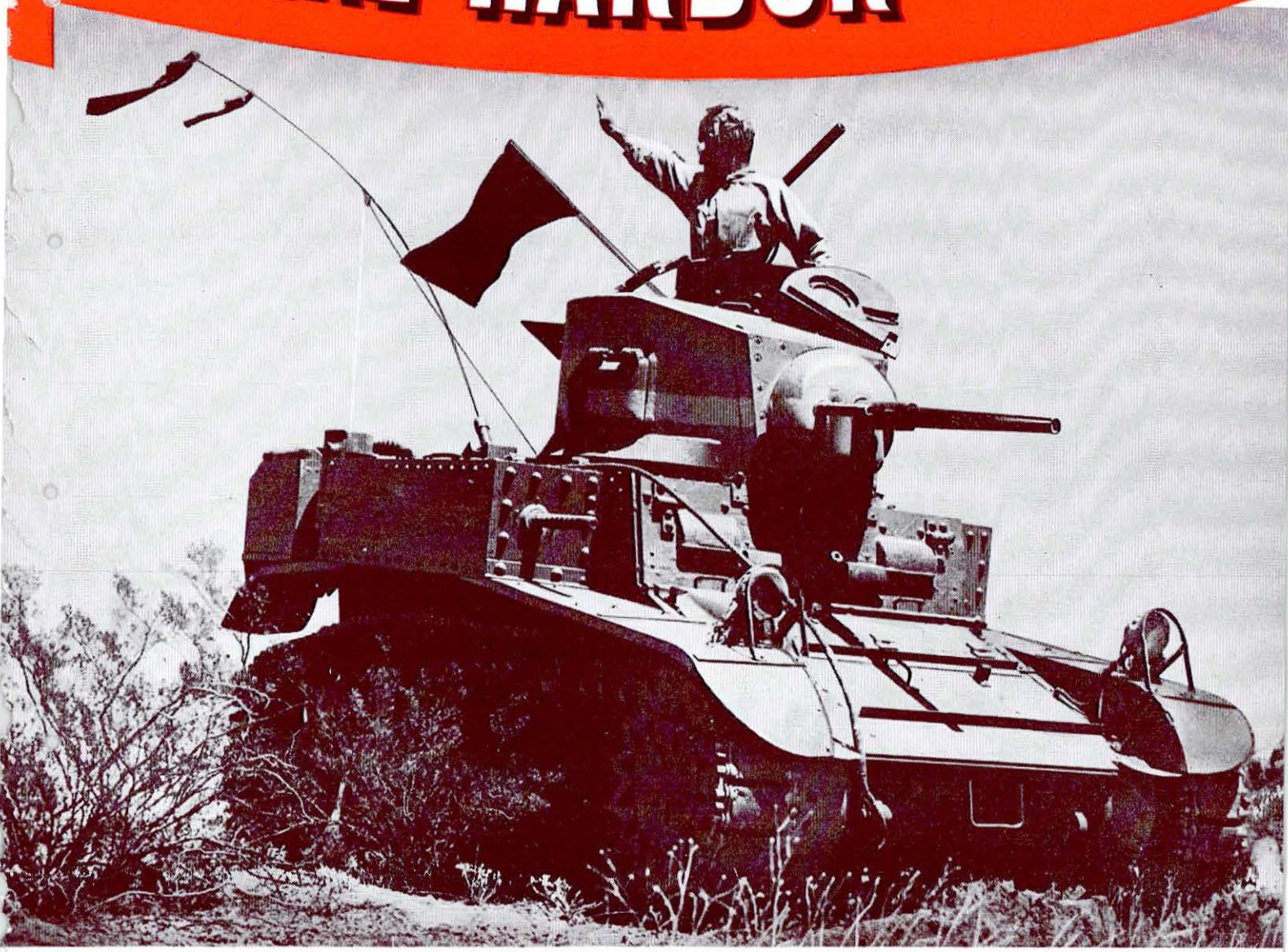
Little-publicized but important victory: Ninety of our light tanks went through a month on the Libyan battle-front with only 12 minor mechanical failures.

In contrast, captured German documents show 44 out of 65 Mark III tanks failed after desert crossing.

NEW YORK WORLD TELEGRAM
November 21, 1942

In the foreground appears a damaged German Mark III tank.

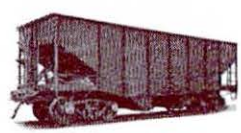
PEARL HARBOR ★



And Never Forget...

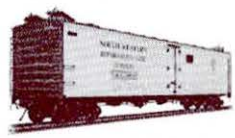
a.c.f.

FREIGHT CARS ARE FIGHTING WEAPONS, TOO!



a.c.f. HOPPER CAR

a.c.f. GONDOLA CAR



a.c.f. REFRIGERATOR CAR

AMERICAN CAR AND FOUNDRY COMPANY

NEW YORK • CHICAGO • ST. LOUIS • CLEVELAND • PHILADELPHIA • PITTSBURGH • ST. PAUL • SAN FRANCISCO

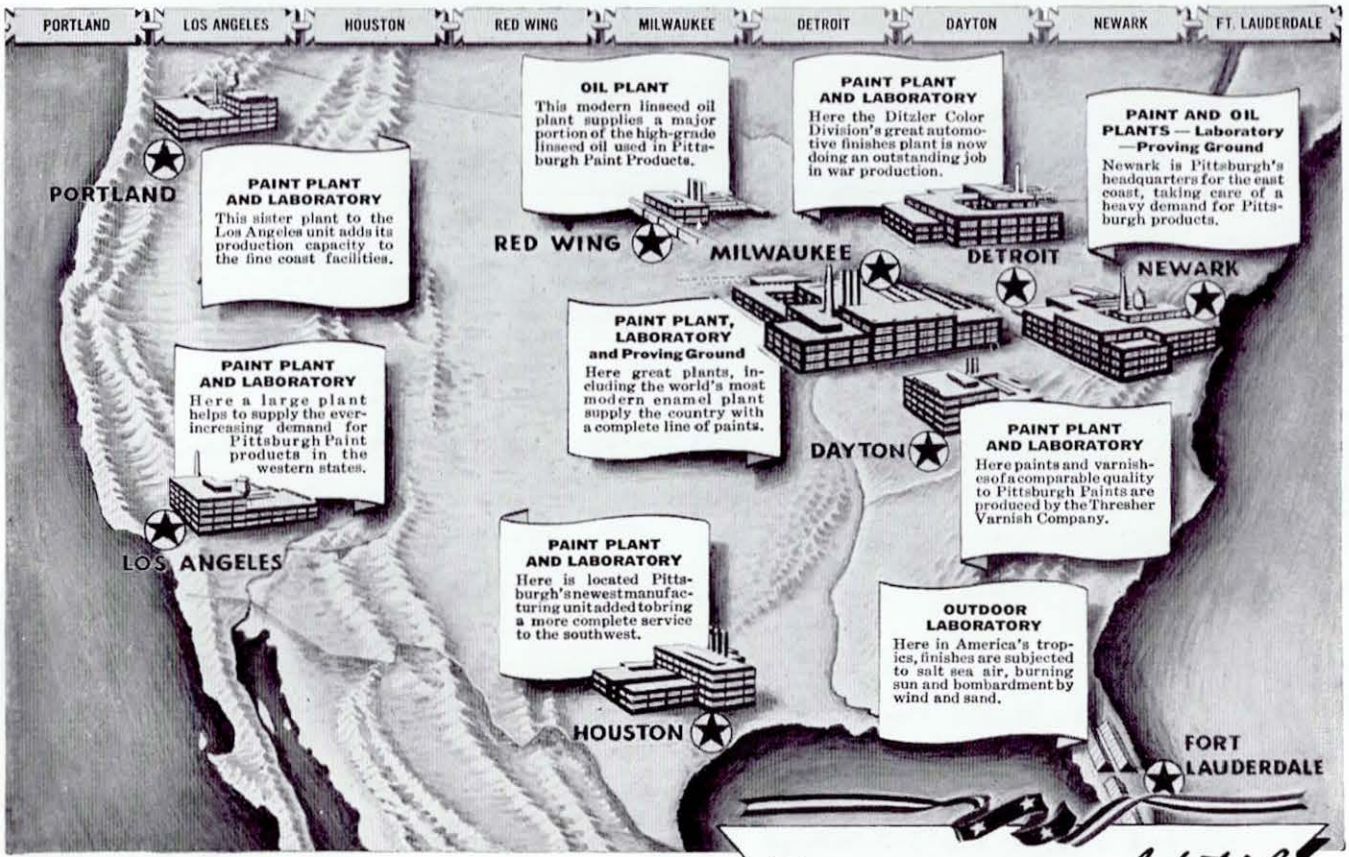
PITTSBURGH'S SEVEN PAINT PLANTS

Are Ideally Situated to Serve America's Railroads

★

WITH plants strategically located from coast to coast, Pittsburgh is in a position to give quick deliveries on your rush orders. Since Pittsburgh is one of America's largest makers of railroad formulations, the paints and finishes available at these seven factories include all types—to take care of any requirement you may have.

When a special finishing problem arises in your shop, Pittsburgh technical men are only a few hours away. They will come to your shop and place their own experience, and the facilities of the great Pittsburgh laboratories, at your service. They will work with your staff until the right finish is found.


PORTLAND
LOS ANGELES
HOUSTON
RED WING
MILWAUKEE
DETROIT
DAYTON
NEWARK
FT. LAUDERDALE
PAINT PLANT AND LABORATORY
This sister plant to the Los Angeles unit adds its production capacity to the fine coast facilities.
OIL PLANT
This modern linseed oil plant supplies a major portion of the high-grade linseed oil used in Pittsburgh Paint Products.
PAINT PLANT AND LABORATORY
Here the Ditzler Color Division's great automotive finishes plant is now doing an outstanding job in war production.
PAINT AND OIL PLANTS — Laboratory —Proving Ground
Newark is Pittsburgh's headquarters for the east coast, taking care of a heavy demand for Pittsburgh products.
PAINT PLANT AND LABORATORY
Here a large plant helps to supply the ever-increasing demand for Pittsburgh Paint products in the western states.
PAINT PLANT, LABORATORY and Proving Ground
Here great plants, including the world's most modern enamel plant supply the country with a complete line of paints.
PAINT PLANT AND LABORATORY
Here paints and varnishes of a comparable quality to Pittsburgh Paints are produced by the Thresher Varnish Company.
PAINT PLANT AND LABORATORY
Here is located Pittsburgh's newest manufacturing unit added to bring a more complete service to the southwest.
OUTDOOR LABORATORY
Here in America's tropics, finishes are subjected to salt sea air, burning sun and bombardment by wind and sand.

PITTSBURGH *Industrial* **FINISHES**

PITTSBURGH STANDS FOR QUALITY PAINT AND GLASS

Pittsburgh Railway Finishes Give "Live Paint" Protection

● After years of research, Pittsburgh has perfected "Vitolized Oil"—a far-reaching improvement over the natural oils used in ordinary paints. When fortified with "Vitolized Oil," Pittsburgh Carhide remains "live" and elastic indefinitely—gains in ruggedness and durability—has increased resistance to smoke, rust and corrosion. This means more miles of service per gallon, less time out for shop tie-up and a maximum of payload hours from your rolling stock.

On railroad bridges and stations, two other Pittsburgh formulations—Ironhide and Stationhide—match Carhide for durability and long run economy. Whenever you have a question on paint it pays to consult Pittsburgh—one of America's largest makers of industrial finishes.

PITTSBURGH PLATE GLASS COMPANY
Industrial Paint Division, Pittsburgh, Pa.

Factories: Milwaukee, Wis.; Newark, N. J.; Houston, Tex.; Los Angeles, Calif.; Portland, Ore.

Ditzler Color Division, Detroit, Michigan

The Thresher Varnish Company, Dayton, Ohio

KEEP YOUR LOCOMOTIVES

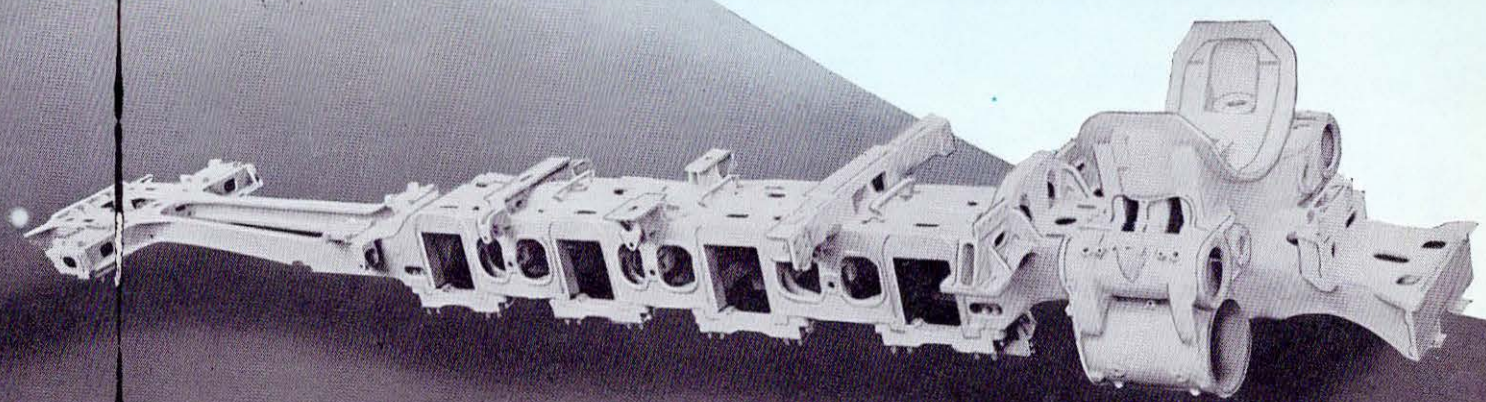
In Action Longer

With COMMONWEALTH One-Piece Locomotive Beds

IT IS a proven fact that locomotives equipped with COMMONWEALTH Cast Steel Locomotive Beds spend less time in repair shops—give more useful miles of active service.

COMMONWEALTH Locomotive Beds incorporate in a single strong casting the main frames of the locomotive, the cylinders, cross bracing, deck castings, and various brackets—eliminating many separate parts and hundreds of bolts and nuts. They provide *greatly increased strength with less weight—simplify locomotive design and construction.*

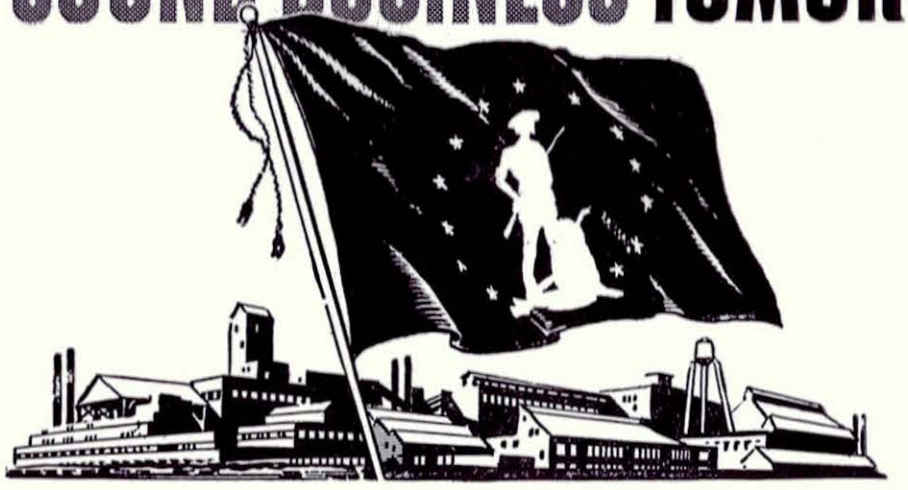
Because America's War Effort *demands* intensive, continuous locomotive operation, the benefits derived from the use of Commonwealth Products are more important than ever today.



GENERAL STEEL CASTINGS

Eddystone, Pa. Granite City, Ill.

FOR VICTORY TODAY AND SOUND BUSINESS TOMORROW



Get This Flag Flying Now!

This War Savings Flag which flies today over companies, large and small, all across the land means *business.* It means, first, that 10% of the company's gross pay roll is being invested in War Bonds by the workers voluntarily.

It also means that the employees of all these companies are doing their part for Victory . . . by helping to buy the guns, tanks, and planes that America and her allies *must* have to win.

It means that billions of dollars are being diverted from "bidding" for the constantly shrinking stock of goods available, thus putting a brake on inflation. And it means that billions of dollars will be held in readiness for post-war readjustment.

Think what 10% of the national income, saved in War Bonds now, month after month, can buy when the war ends!

For Victory today . . . and prosperity *tomorrow,* keep the War Bond Pay-roll Savings Plan rolling in *your* firm. Get that flag flying now! Your State War Savings Staff Administrator will gladly explain how you may do so.

If your firm has not already installed the Payroll Savings Plan, *now is the time to do so.* For full details, plus samples of result-getting literature and promotional helps, write or wire: War Savings Staff, Section F, Treasury Department, 709 Twelfth Street NW., Washington, D. C.

EVERYBODY EVERY PAYDAY AT LEAST 10%

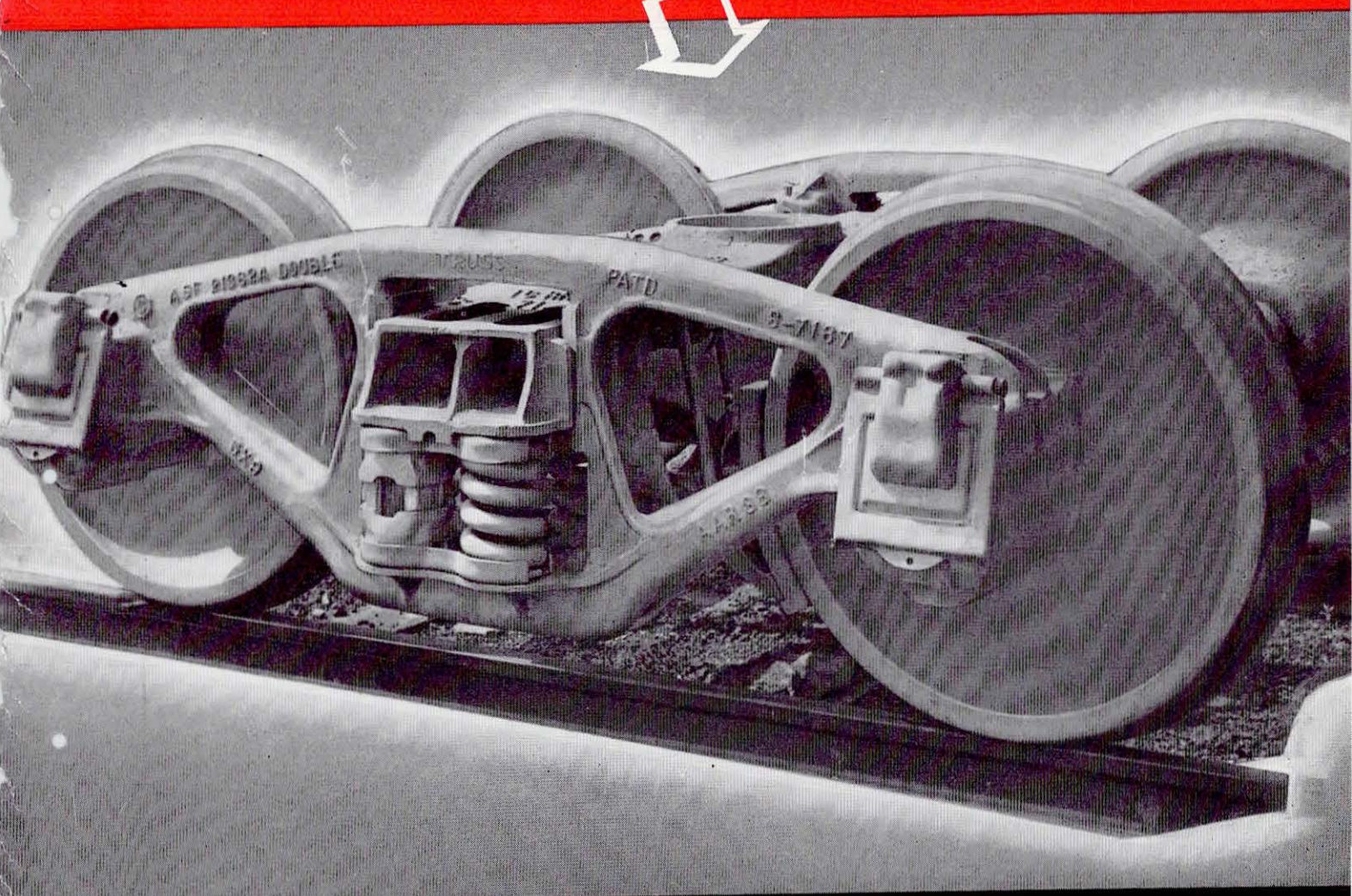
Save With

War Savings Bonds

This Space Is a Contribution to America's All-Out War Program by

RAILWAY AGE

Over 120,000 car sets of SELF-ALIGNING Trucks are now in service



AMERICAN STEEL FOUNDRIES

Chicago

GET THE MOST OUT OF EVERY ELECTRODE

Burn them down to a 2" stub

By burning every electrode down to a 2" stub you can save up to 5 lbs. of electrodes from every 50 lb. box. This is one important way that good welding operators are helping to meet the electrode shortage. Some other important rules to follow are:

1. Choose the proper welding current for the size of electrode being used. Excessive welding current may break down the coating before the electrode is consumed.

2. Select largest diameter electrodes to get faster deposition of metal. Using an 18" length instead of 14" reduces the number of times it is necessary to change an electrode for a given length of weld. This increases welding speed 25-30% and saves 3-4% stub loss.

3. Make legs of fillet welds equal and make face of fillet welds flat. Convexity of fillet weld faces should never exceed 10%.

Follow these suggestions to get the maximum work out of every electrode. In this way you can help prevent waste of the vital materials that are helping the railroads perform their essential wartime job.

Air Reduction

General Offices: 60 EAST 42nd ST., NEW YORK, N. Y.

IN TEXAS:

MAGNOLIA-AIRCO GAS PRODUCTS CO.

General Offices: HOUSTON, TEXAS

OFFICES IN ALL PRINCIPAL CITIES

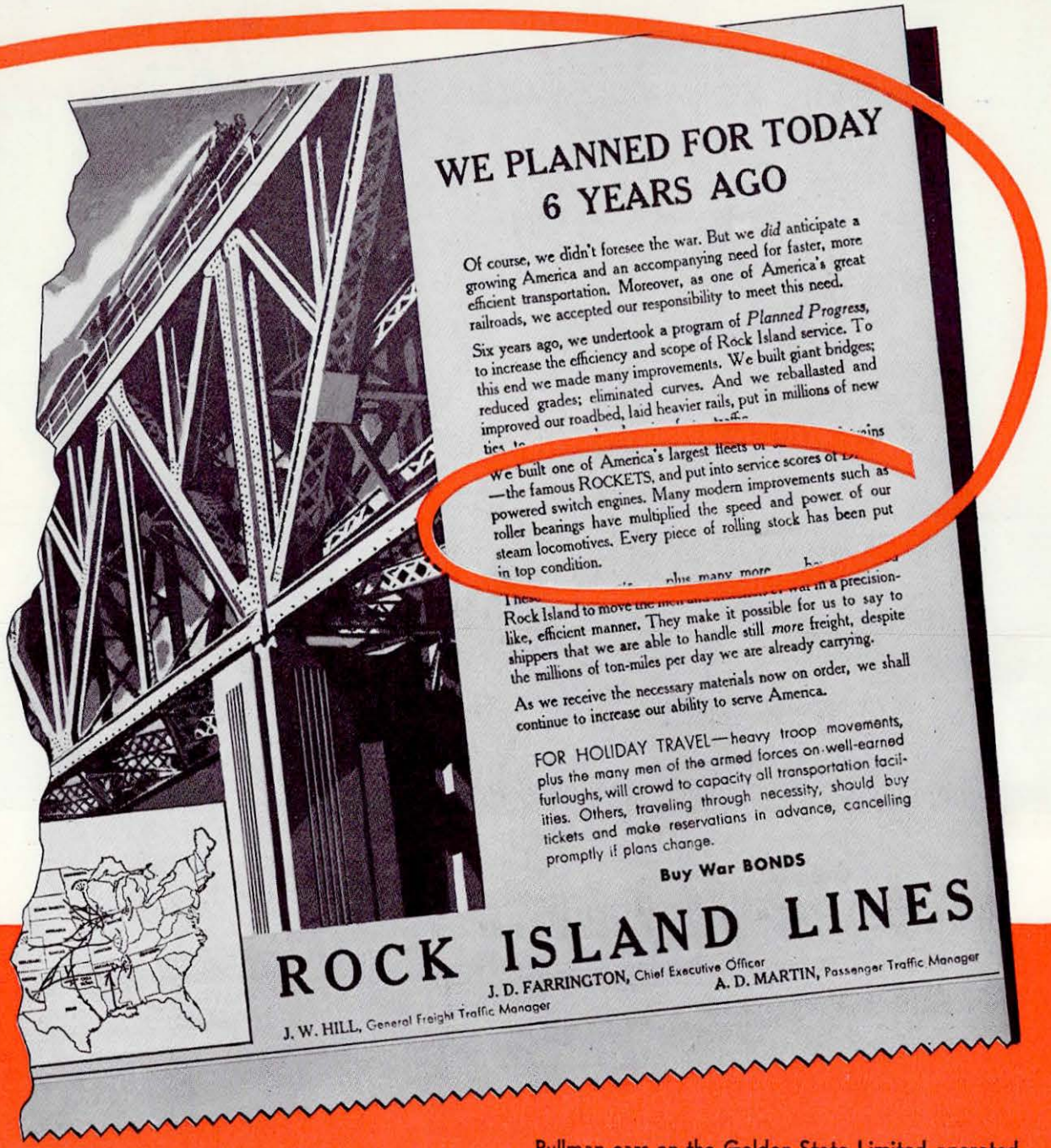
AIRCO

WILSON

IDLE CYLINDERS ARE PRODUCTION SLACKERS: *Keep 'em rolling for victory!*

ROLLER BEARINGS SYMBOLIZE MODERNIZATION

in this Rock Island Advertisement—



WE PLANNED FOR TODAY
6 YEARS AGO

Of course, we didn't foresee the war. But we *did* anticipate a growing America and an accompanying need for faster, more efficient transportation. Moreover, as one of America's great railroads, we accepted our responsibility to meet this need.

Six years ago, we undertook a program of *Planned Progress*, to increase the efficiency and scope of Rock Island service. To this end we made many improvements. We built giant bridges; reduced grades; eliminated curves. And we reballasted and improved our roadbed, laid heavier rails, put in millions of new

We built one of America's largest fleets of
—the famous ROCKETS, and put into service scores of
powered switch engines. Many modern improvements such as roller bearings have multiplied the speed and power of our steam locomotives. Every piece of rolling stock has been put in top condition.

Rock Island to move the
like, efficient manner. They make it possible for us to say to shippers that we are able to handle still *more* freight, despite the millions of ton-miles per day we are already carrying.

As we receive the necessary materials now on order, we shall continue to increase our ability to serve America.

FOR HOLIDAY TRAVEL—heavy troop movements, plus the many men of the armed forces on well-earned furloughs, will crowd to capacity all transportation facilities. Others, traveling through necessity, should buy tickets and make reservations in advance, cancelling promptly if plans change.

Buy War BONDS

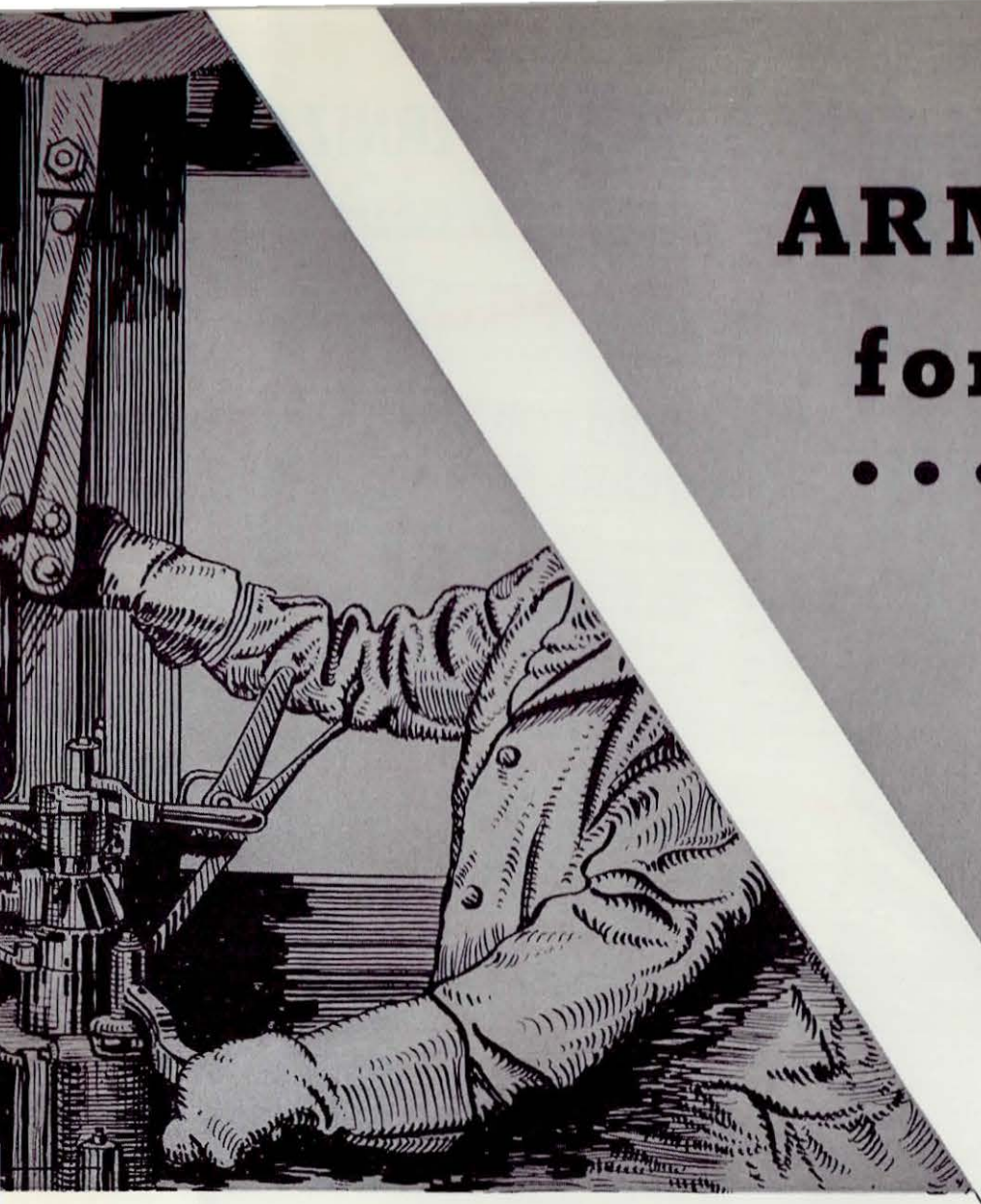
ROCK ISLAND LINES

J. D. FARRINGTON, Chief Executive Officer
A. D. MARTIN, Passenger Traffic Manager
J. W. HILL, General Freight Traffic Manager

—and logically so for on their steam locomotives equipped with Timken Bearings as compared with similar friction bearing locomotives they have obtained 70% more mileage and reduced maintenance costs 42%. This record is all the more significant today for it was achieved by locomotives on which driving axles were *converted* from friction to Timken Bearings. The Rock Island has converted all in all 99 steam engines to Timken Bearings. Timken Bearings are used in 15 diesel locomotives and 72 cars of the famous fleet of "Rockets" and in 28 new Pullman cars on the Golden State Limited operated jointly by the Southern Pacific and Rock Island between Chicago and Los Angeles.

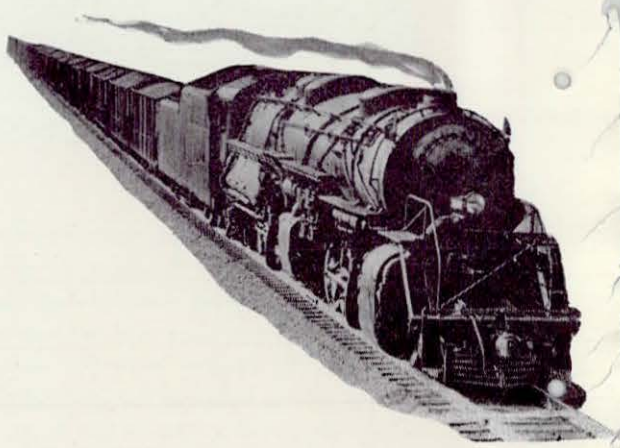
The Rock Island really "Planned for Today" and moreover has a sizable start on the necessary roller bearing equipment for the future—FUTURE being the day Victory belongs to America. The Timken Roller Bearing Company, Canton, Ohio.

"All there is **TIMKEN** *in Bearings"*
TRADE-MARK REG. U. S. PAT. OFF.
RAILWAY ROLLER BEARINGS



ARMS . . . for *Victory* . . . —

BETWEEN the production and fighting fronts reach long sinewy arms of transportation — the railroads, which are vital to the movement of materials, equipment, and men. Speed, volume, and reliability are demanded of these carriers . . . Trains loaded to capacity, and hauled by powerful locomotives, are piling up ton-mileage records, through the resourcefulness, ingenuity, and loyalty of every railroad man . . . None has greater responsibility than the engineman, with arms reaching to controls over power and speed. Modern air brakes on locomotive and cars provide him with a means for prompt, smooth, and safe handling of war-supplies trains travelling at time-saving speeds.



WESTINGHOUSE AIR BRAKE CO.

WILMERDING, PENNSYLVANIA

Railway Age

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The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

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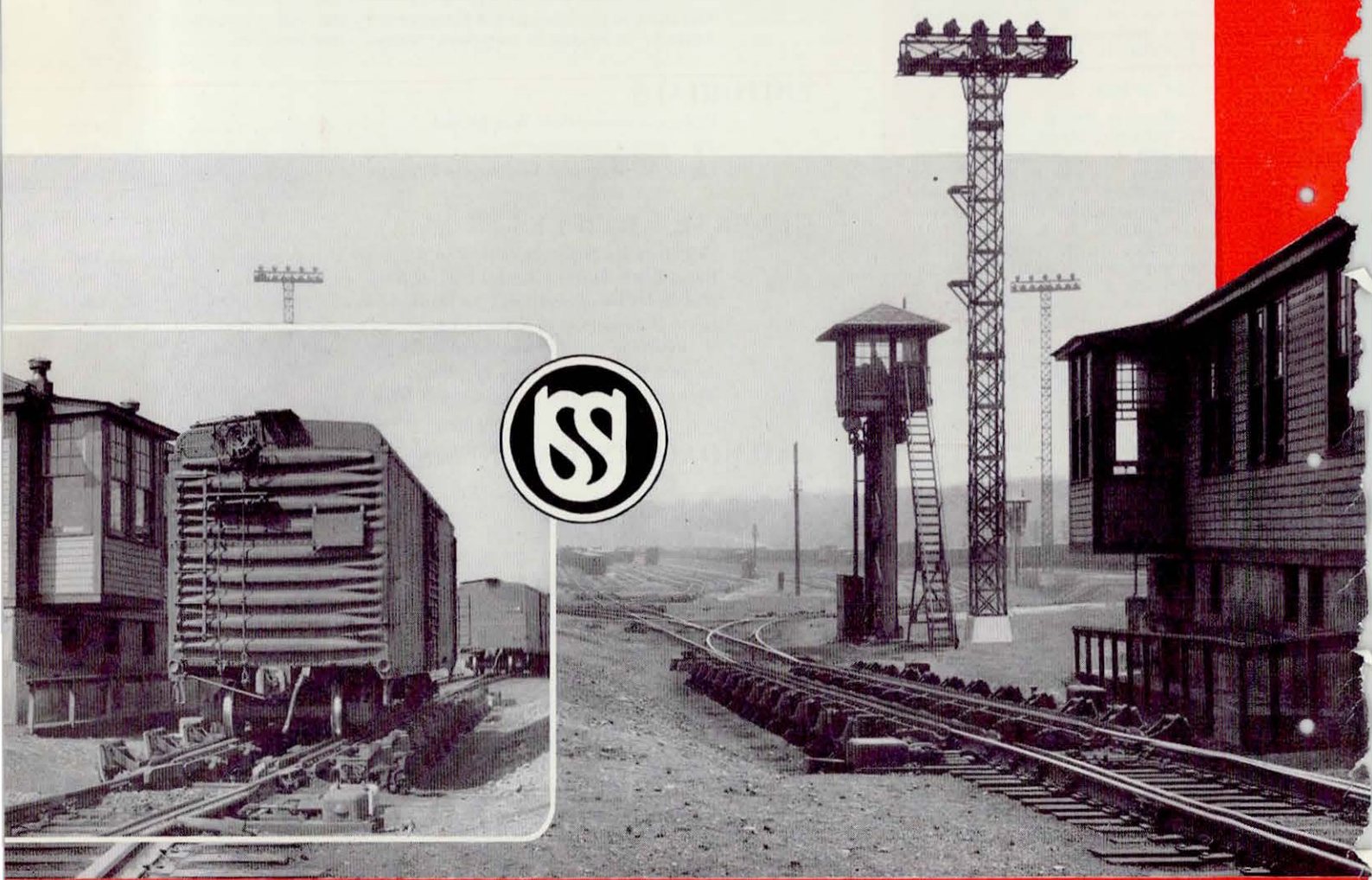
War-time transportation expedited
in 22 "Union" CAR RETARDER
equipped yards!

MANY of the 22 installations of "Union" Car Retarders and power-operated switches were placed in service, before the war, to make available at all hours regardless of weather conditions the peak capacity of the yards.

Today, all of these 22 yards are experiencing heavier traffic than ever before. The humping records made under yesterday's peace-time operation are being exceeded regularly in their every-day operation with war-time traffic.

Trains are moved promptly from the receiving yard and cars are classified rapidly for departing road trains because "Union" Car Retarders permit full use of yard facilities. Yard congestion and yard delays are largely eliminated. Safety for both men and equipment is increased. Engine hours are greatly reduced. And, in many cases, the consequent reduction or elimination of switching at other points results in accelerated movement of freight over the entire system.



3000

UNION SWITCH & SIGNAL COMPANY

SWISSVALE, PA.

NEW YORK · CHICAGO · ST. LOUIS · SAN FRANCISCO

The Week at a Glance

ERIE'S "NORMAL SCHOOL": 1,500 Erie officers and supervisors—from President Woodruff on down the line to newly-promoted foremen—have taken instruction in teaching employees how best to do their work, and other supervisors will follow through in due course. The method is that of the Training-Within-Industry Program of the War Manpower Commission, adapted by the Erie to meet its own requirements. The course was started at Cleveland—with key men in attendance, who later became instructors in their own baliwicks. An article herein describes this "sure-fire" method in terms which make understandable the Erie's enthusiasm.

●

PEACE—AT A PRICE: The President's budget message, reviewed in the news pages herein, carrying a recommendation of about a quarter of a million dollars for the Railroad Adjustment Board, went in for some adulation of the Railway Labor Act. There have been, it was revealed to Congress, few strikes on the railroads since the enactment of this benign legislation. There have been other sections of the globe also where, during the past dozen years, there have been few strikes—without that fact being, necessarily, a proof that the peace which reigneth is righteous.

●

EARNINGS NOW & IN '18: Here is a coincidence for you—the railroads in the twelve months ended November, 1942, earned a return of 5.23 per cent, which is almost exactly the rate which was *guaranteed* to them under government operation in the last war. But *now* the economic dictator insists that the railroads ought to have their rates reduced by a half-billion yearly, and the union magnates demand a wage increase of three-quarters billion. The present official and union attitude to the roads is, therefore, that they ought to get less for a magnificent transportation job (with no deficits for the treasury to pay) than the preceding Democratic administration paid them for doing nothing except entrust their property to the genius of the late W. G. McAdoo. The leading editorial herein presents this striking contrast between the ideas of two Administrations, outwardly of the same political party, toward private property.

●

POLITICAL POST-WAR PLANS: The horde of sociologists the present Administration has hired to do its "post-war planning" agree with competent economists on one point—that is, that we cannot have post-war prosperity without continuing heavy investment in capital goods. But the sociologists depart from experience and from economic doctrine in insisting that government "investment" will be necessary to insure full activity in the capital goods industries; private investment, it is assumed, is too anemic to do the job any more. The railroads increased their investment by 7½ billions in the decade ended 1929, when they were permitted earnings at a rate averaging better than 4½ per cent. Capital investment *did not increase at all* in the decade ended 1940 and maintenance expenditures were halved—as a result of the meager rate of earnings in the depression, protracted by New Deal persecution of free enterprise. The insistence of New Deal sociologists on the necessity of post-war government investment is nothing more than a confession that government policy does not propose to permit industry to make the earnings necessary to induce a full measure of investment under free enterprise.

●

WHY DIV. 1 IS SO BUSY: There are more than 6,000 cases pending before Division 1 of the Railroad Adjustment Board, and the interested union magnates have suggested, for quick settlement, the ingenious device of using previous decisions as precedents. In other words, a carelessly-worded agreement made in a lax moment by the management of the X. Y. & Z., and decided by a biased referee in favor of the complainant, should determine working conditions on the P. D. Q., whose schedules are too precise to be distorted. One unfortunate railroad has to pay double time to train crews when cars in a train exceed 50 and the expedient suggested by the labor monopolists is undoubtedly intended to make such rules as this nation-wide. The obvious reason for Division 1's congested docket is its complainant-can't-lose decisions, which *invite* litigation. Cures should attack causes, not symptoms; and should avoid feeding the disease.

●

REGULATORY SCLEROSIS: Traditionalists on the Interstate Commerce Commission have struck down one of the most promising and thoughtful of railroad efforts to recast l. c. l. rates to take account of present (non-wartime) transportation realities. Their victim is B. & M. and Maine Central schedules, in effect almost three years, which reduced practically all package freight heretofore first, second and third class to Col. 45 (90 per cent of third class)—a level which exceeded out-of-pocket costs in all but a few instances. The position of the old guard regulators is equivalent to a declaration that any improvement in l. c. l. rate-making shall be the the exclusive property of the trucks. The more traffic the railroads lose to these innovators, by reason of their ancient high-rated l. c. l. classifications, the less will be their opportunity to correct the condition, as unit costs mount with falling traffic. Realism on the I. C. C. is not dead though; there were four dissents.

●

ADMONISHES SHIPPERS: ODT's Fred Keiser appeared at the annual meeting, reported herein, of the Mid-West Shippers' Board and shook a warning digit at the assembled traders. They are, said Mr. Keiser, "squandering transportation." They are buying supplies from distant markets, instead of close to home. There is too much circuitous routing. Unless the culprits reform voluntarily, they will have reform imposed upon them—so this speaker promised.

ODT AS CLAIMANT AGENCY: ODT's status as a "claimant agency" under the WPB's Controlled Materials Plan has now become official, and is explained in the news pages herein. What this new set-up means is that an ODT representative will now sit in with the Navy, Army, Maritime Commission and other strategic users of materials, and will have a chance to question the other claimants' demands, as well as submit its own contentions to their competitive scrutiny. Heretofore, transportation has had to take what was left after the claimant agencies got all they wanted (with only such championship for its needs as the unknowing, and perhaps unsympathetic, Office of Civilian Supply was able and willing to give). Transportation now sits at the white folks' table, and may not henceforth have to subsist entirely on backs, bones and giblets.

●

LICKING A FLOOD: A nine-span bridge has been raised on jacks, under traffic, to get it out of the way of flood water. How the job was done—avoiding a menace to war traffic—is described herein.

●

"CONVERTED" PULLMANS: 800 lounge, sleeping and club cars—serving to make travel more spacious but not adding to its quantity output—have been rebuilt into utilitarian vehicles (coaches and troop-sleepers). The nature and extent of this conversion is set forth in our news pages. Over 500 parlor and other Pullman cars have been sold to the railroads to be made over into coaches, while the Pullman Company itself has rebuilt more than 200 parlor and other cars into troop sleepers.

●

CROSS-HAULING REALITY: The case against so-called "cross-hauling" sounds simple as long as you stop right there—with the idea. When it comes to putting such a prohibition into practice, what sounded easy as a theory becomes very complex. So Mr. Eastman told a produce dealers' meeting at Cincinnati this week (reported in our news pages). If anti-cross-haul orders are to be issued before there is any dire shortage of transportation, then that headache belongs to people who know marketing channels in a particular trade. The ODT will "implement," but not originate, such orders unless, of course, there should develop a real transportation shortage.

●

LENDING LOCOMOTIVES: Some 700-odd locomotives are pulling trains in sections far away from their own stamping grounds—carriers with spare engines having leased them to their power-hungry brethren in distant parts. Further details are given in the news pages herein. The North Western appears to be the largest donor in the transfusion of power—108 of its engines now serving other lines, some of them having been sold for service in Mexico. The shift would have been larger except for clearance and kindred difficulties. The old man's clothes don't usually fit his son; and the same with engines.

GENERAL MOTORS DIESEL LOCOMOTIVES ARE

Not "A-W-O-L"

We're In The Navy Now!

LEST you forget, America, we repeat again that this war will be decided by the combined forces of the United Nations on land, on sea and in the air. VICTORY will be ours if our men have the tools with which to fight, the finest it is possible to produce.

But of all the indispensable parts of the war effort, *transportation* is one of the most far-reaching. Without *transportation*, our fighting forces, war materials and the great army of men and women in our production plants, would be useless. More than 1100 *General Motors Diesel Locomotive Units*, in all classes of service, are providing faster schedules, greater tonnage-hauling capacity, higher availability, with marked reductions in operating costs.

And, mark you! *GM Diesel Locomotives* are not "A-W-O-L." We are still building them as directed by the War Production Board.

The needs of the United Nations continue to be increasingly serious and Electro-Motive, like the other 103 plants of General Motors, has been honored with one of our Government's important assignments. It is now 24 hours a day producing more for VICTORY because

VICTORY IS OUR BUSINESS

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS CORPORATION — LA GRANGE, ILLINOIS, U.S.A.

Railways in the Post-War Period

The war problem and the post-war problem of the railways in putting and keeping themselves in condition to be able to continue contributing their full share toward the national welfare are not two different problems, but the same problem. It boils right down to the problem of making enough net operating income both during and after the war.

Only if they make enough net operating income during the war period and the post-war period combined will they be able, under private ownership and management, to (1) provide during the war period all the transportation that restricted manpower and materials will permit, and (2) accomplish during the post-war period the extensive rehabilitation of their properties that their own and the public interest will require.

5.21 Per Cent *Guaranteed* in 1917-19

In this connection their net return during World War I and the period following, and what they did with it, is evidence that cannot rationally be ignored now. In the last war period, on the recommendation of President Wilson, the Class I railways were guaranteed by the government, and received, the equivalent of an average annual net operating income of $918 million during twenty-six months of government operation and the six months immediately following. That was 5.21 per cent on investment. Their average annual net operating income (including this) in the twelve years ending with 1929 was almost exactly $1,000 million, or 4.51 per cent on investment. In contrast, their average annual net operating income in the thirteen years of depression and war ending with 1942 was only $650 million, or 2.47 per cent on investment. In the twelve months ending with November, 1942, it was $1,390 million. But investment is now 50 per cent larger than during the last war. Consequently, this $1,390 million yielded a return of only 5.23 per cent—almost exactly the same as the 5.21 per cent *guaranteed* by the government during the last war.

Because of the guaranteed return paid, and the earnings subsequently made, the railway companies were able following the last war to finance extensive rehabilitation of their properties. Investment in road and equipment of Class I railways was increased $7,524 million in the ten years ending with 1929. This increase in investment was three-fourths as large as the total net operating income earned in the decade. The railways' large expenditures to make up deferred maintenance as well as to make improvements contributed greatly toward the prosperity that prevailed during the last post-war period. And recent developments have shown that these expenditures accomplished something much more important. For it was the expenditures the railways made in the *last post-war period* that put them in condition to cope with the unprecedented traffic demands of the *present war period.*

Because their gross and net earnings were so greatly reduced during the depression decade ending with 1940, their total expenditures for maintenance were *only one-half* as large as in the decade ending with 1929; and there was *no increase at all* in the investment in their properties. Almost every dollar of the investment with which the railways are helping the Roosevelt administration win the war was made under previous administrations.

Significant "Plans" for The Railways

The foregoing facts have a very important bearing on demands and proposals now being made. One of these demands is that of the administration's Office of Price Administration for a $500 million reduction of rates. Another of them is that of the labor unions for a $750 to $800 million advance in wages. Together they would wipe out almost all the net operating income now being earned. Related to these demands is a proposal—that of the National Resources Planning Board—that the government shall acquire railway tracks and terminals, or even adopt full government ownership.

The railways emerged from World War I with their plant badly run down. They will emerge from World

War II with much of it obsolete or worn out. One reason is that they are handling so much more traffic. Another is the small expenditures for maintenance and improvements they were able to make in the decade ending with 1940. These expenditures totaled an average of $2,900 million annually in the decade ending with 1929; and only an average of $1,155 million in the decade ending with 1940. The average age of rail and equipment, to cite but a few very important examples, is greater than ever before. Much of the facilities are being kept in service that under normal conditions and practice would long since have been scrapped, and only by kinds and amounts of repairing such as were never done before. Much longer continuance of this process will result in need for a post-war program of rehabilitation far exceeding that needed after the last war.

However, actual experience during World War I and the last post-war period that we have cited clearly shows that, if afforded equal opportunity to make earnings during and subsequent to World War II, the railways, under private ownership and management, will be able fully to rehabilitate their properties and by their expenditures contribute their full share toward prosperity during the next post-war period. Why, then, is the administration's Office of Price Administration now seeking reductions of rates which would wipe out so much of the net operating income now being earned —although last year's earnings yielded a return on investment only as large as the government *guaranteed* during the last war? And why did the administration's National Resources Planning Board, in its recent report on transportation, advocate adoption of partial or complete government ownership of railways upon the ground that private railway companies will be unable to finance needed rehabilitation of railway properties after the present war? Is the true explanation to be found in the following statement in the report: "The tremendous task of planning *adequate public works* for the period of transition from war to peace cannot be successful in the field of transportation *unless it comprehends all transport media?*"

How to Promote Large Capital Expenditures

Is it the administration's policy to so treat the railways during and after this war as to make their post-war rehabilitation by private ownership and management impossible, and thus *force* their inclusion in its post-war program of public works in order to make it big enough?

Director-General of Railroads McAdoo, after the armistice in 1918, advocated continuance of government operation for at least five more years upon the ground that the railways could not safely be returned to private operation. Five years later (in 1923) the Class I railways under private operation made more net operating income than in any previous year excepting 1916 and increased their investment the most that they ever did in any single year. They will do relatively as well under private ownership and management during the next post-war period if government will give them as good treatment as it gave them during the last war period and post-war period.

The Scrap Campaign

No campaign in the interest of the war effort has received more universal and wholehearted co-operation from the railways than that launched last summer to bring in the scrap that is so urgently needed in the production of steel. And no industry surpassed the railways in the measure of its contribution. Within the space of a few weeks 556 emergency salvage directors were recruited among the officers on as many railways, and more than 9,000 other railway men were enlisted in aggressive committee direction of scrap collection activities on every mile of our railways. Through these means, the railways provided more than 15 per cent of all the scrap collected. Such an achievement reflects great credit on the railways.

In spite of this record, there are those in high places in our government who are critical of the railways and contend that they should do more in this direction. In refuting these criticisms, the friends of the railways are confronted with a lack of accurate information regarding the tonnage of scrap actually collected and released by the railways. Figures are available from certain railways, estimates have been made of their combined totals, but they lack specific support. The best figure for the railways as a whole is one prepared by the U. S. Bureau of Mines and it is admittedly incomplete. While it is generally accepted that the railways are providing more than 15 per cent of all the scrap collected, there are those who believe that this figure, large though it is, is entirely too low. The importance of the correct figure is such, even if used only to refute the criticism referred to, as to warrant the compilation currently by some central agency of the tonnage of scrap collected and released to the mills. In an effort to avoid adding to the already much overworked questionnaires and requests for information of all sorts, the Railway Salvage branch of the War Production Board has refrained to date from asking the railways to report their scrap collection. There is much to warrant the reversal of this practice to the extent of requesting a simple return, possibly on a post card, of the scrap collected by each road from month to month in order that the facts may be determined and broadcasted to the credit of the railways.

In analyzing the success of this campaign among the railways, one comes immediately to the fact that those in charge approached the railways on a national basis, without regard to arbitrary state or other subdivisions. In this respect, the approach to the railways differed from that to many other industries,

which were approached through the twelve district organizations of the W. P. B., each jealous of its territory and determined to surpass other districts. State lines mean little to railway operation, as successful organizations selling the railways have long since learned, for railways operate on a system basis. This is as true of the collection of scrap as of the purchase of new materials. In the interest of continued success in this effort, it is to be hoped that the present approach to the railways as systems, rather than on geographical lines, will be continued.

Labor-Management Co-operative Results

While the primary objective of the labor-management committees, mentioned in the comment on Employees' Suggestion Systems, *Railway Age,* January 9, page 155, is increased production at this critical period when every possible man-hour of effort and every ounce of material must be used effectively for the winning of the war, we must not lose sight of the fact that, in the final analysis, they may prove just as effective in winning the peace. President C. J. Symington of the Symington-Gould Corporation, who has thrown himself heart and soul into the promotion of labor-management co-operation, feels strongly that it may pave the way for post-war relationships which will not only insure more efficient production, but will be an important factor in stabilizing industry and employment, and thus preserving the American system.

There is still another by-product that should make an especial appeal to railroads, public utilities and merchandisers. The railroads, for instance, now enjoy the largest passenger and freight traffic in their entire history. Many thousands of people in the emergency are now using trains for the first time, or have used other forms of transportation for so long a period that they are not acquainted with modern railroad conveniences. What are their reactions to these services? If favorable, they may remain customers and friends of the railroads when peace comes and other forms of transportation fight hard to take business away from them. If unfavorable, they will quickly desert the railroads at the first possible opportunity. The railroads are, of course, badly handicapped by the shortage of manpower at this critical period, when so many exacting demands are being made upon them. Travelers and railroad patrons in normal times found much to criticize, particularly in light of the courtesies that were being extended to them by the newer forms of transportation. It is true that the public is being subjected to all sorts of inconveniences by tradesmen and service organizations. What would it not mean to the railroads if all of the employees would now make a special effort to be courteous to and thoughtful of the interests of the traveling and shipping public? There is no question that the benefits of having many friends would be bountiful in the future, and at a time when the railroads and their employees will be looking for customers, rather than for some place to put them.

It is necessary under present conditions to curtail transportation, and lack of manpower makes it impossible to continue some services. Is it not possible, however, through labor-management co-operation and suggestion systems to mobilize the ingenuity and good-will of the entire railroad organization, so that the public will be subjected to the least possible amount of inconvenience and will be made to feel that the railroads really value its patronage?

Adam Smith on How to Finance Public Works

"The expense of making and maintaining the public roads of any country must evidently increase with the annual produce of the land and labor of that country, or with the quantity and weight of the goods which it becomes necessary to fetch and carry upon those roads. . . . It does not seem necessary that the expense of those public works should be defrayed from that public revenue, as it is commonly called, of which the collection and application is in most countries assigned to the executive power. The greater part of such public works may easily be so managed as to afford a particular revenue sufficient for defraying their own expense, without bringing any burden upon the general revenue of the society.

"A highway, a bridge, a navigable canal, for example, may in most cases be both made and maintained by a small toll upon the carriages which make use of them: a harbor, by a moderate port-duty upon the tonnage of the shipping which load or unload in it. . . .

"When the carriages which pass over a highway or a bridge, and the lighters which sail upon a navigable canal, pay toll in proportion to their weight or their tonnage, they pay for the maintenance of those public works exactly in proportion to the wear and tear they occasion of them.

—*Wealth of Nations, Bk. V, Part I, Article I.*

"It seems scarce possible to invent a more equitable way of maintaining such works.

"This tax or toll too, though it is advanced by the carrier, is finally paid by the consumer, to whom it must be always charged in the price of the goods. As the expense of carriage, however, is very much reduced by means of such public works, the goods, notwithstanding the toll, become cheaper to the consumer than they could otherwise have done; their price not being so much raised by the toll as it is lowered by the cheapness of the carriage. The person who finally pays the tax, therefore, gains by the application more than he loses by the payment of it. . . . It is in reality no more than a part of that gain which he is obliged to give over in order to get the rest. It seems impossible to imagine a more equitable method of raising a tax. . . .

"When high roads, bridges, canals, etc., are in this manner made and supported by the commerce which is carried on by means of them, they can be made only where that commerce requires them, and consequently where it is proper to make them. Their expense too, their grandeur and magnificence, must be suited to what that commerce can afford to pay. They must be made consequently as it is proper to make them."

General Officers and Local Supervisors Alike Are Learning to Teach

Top: A group of Erie executives attending training classes. Included in the group are, seated from left to right, G. A. Achenbach, secretary; P. H. Donovan, assistant chief claim agent; T. E. Savage, purchasing agent; J. Tapping, assistant to purchasing agent; H. W. Trumpler, assistant treasurer; G. H. Smith, assistant to the treasurer; C. E. Post, assistant secretary (only the top of Mr. Post's head is showing); E. F. Morgenroth, treasurer; H. A. Taylor, vice-president and general counsel; J. W. Smith, chief engineer; H. C. Minning, chief claim agent and Dr. J. Frank Dinnen, chief surgeon. Standing is H. A. McAllister, educational director. Members of this class absent at the time the picture was taken were: A. B. Johnson, general land and tax agent, and C. H. Splitstone, assistant chief engineer.—Center: A practice demonstration under way at the Meadville shops.—Bottom: A group of supervisors from various departments at Jersey City meeting in a dining car.

which were approached through the twelve district organizations of the W. P. B., each jealous of its territory and determined to surpass other districts. State lines mean little to railway operation, as successful organizations selling the railways have long since learned, for railways operate on a system basis. This is as true of the collection of scrap as of the purchase of new materials. In the interest of continued success in this effort, it is to be hoped that the present approach to the railways as systems, rather than on geographical lines, will be continued.

Labor-Management Co-operative Results

While the primary objective of the labor-management committees, mentioned in the comment on Employees' Suggestion Systems, *Railway Age*, January 9, page 155, is increased production at this critical period when every possible man-hour of effort and every ounce of material must be used effectively for the winning of the war, we must not lose sight of the fact that, in the final analysis, they may prove just as effective in winning the peace. President C. J. Symington of the Symington-Gould Corporation, who has thrown himself heart and soul into the promotion of labor-management co-operation, feels strongly that it may pave the way for post-war relationships which will not only insure more efficient production, but will be an important factor in stabilizing industry and employment, and thus preserving the American system.

There is still another by-product that should make an especial appeal to railroads, public utilities and merchandisers. The railroads, for instance, now enjoy the largest passenger and freight traffic in their entire history. Many thousands of people in the emergency are now using trains for the first time, or have used other forms of transportation for so long a period that they are not acquainted with modern railroad conveniences. What are their reactions to these services? If favorable, they may remain customers and friends of the railroads when peace comes and other forms of transportation fight hard to take business away from them. If unfavorable, they will quickly desert the railroads at the first possible opportunity. The railroads are, of course, badly handicapped by the shortage of manpower at this critical period, when so many exacting demands are being made upon them. Travelers and railroad patrons in normal times found much to criticize, particularly in light of the courtesies that were being extended to them by the newer forms of transportation. It is true that the public is being subjected to all sorts of inconveniences by tradesmen and service organizations. What would it not mean to the railroads if all of the employees would now make a special effort to be courteous to and thoughtful of the interests of the traveling and shipping public? There is no question that the benefits of having many friends would be bountiful in the future, and at a time when the railroads and their employees will be looking for customers, rather than for some place to put them.

It is necessary under present conditions to curtail transportation, and lack of manpower makes it impossible to continue some services. Is it not possible, however, through labor-management co-operation and suggestion systems to mobilize the ingenuity and good-will of the entire railroad organization, so that the public will be subjected to the least possible amount of inconvenience and will be made to feel that the railroads really value its patronage?

Adam Smith on How to Finance Public Works

"The expense of making and maintaining the public roads of any country must evidently increase with the annual produce of the land and labor of that country, or with the quantity and weight of the goods which it becomes necessary to fetch and carry upon those roads. . . . It does not seem necessary that the expense of those public works should be defrayed from that public revenue, as it is commonly called, of which the collection and application is in most countries assigned to the executive power. The greater part of such public works may easily be so managed as to afford a particular revenue sufficient for defraying their own expense, without bringing any burden upon the general revenue of the society.

"A highway, a bridge, a navigable canal, for example, may in most cases be both made and maintained by a small toll upon the carriages which make use of them: a harbor, by a moderate port-duty upon the tonnage of the shipping which load or unload in it. . . .

"When the carriages which pass over a highway or a bridge, and the lighters which sail upon a navigable canal, pay toll in proportion to their weight or their tonnage, they pay for the maintenance of those public works exactly in proportion to the wear and tear they occasion of them.

—*Wealth of Nations, Bk. V, Part I, Article I.*

"It seems scarce possible to invent a more equitable way of maintaining such works.

"This tax or toll too, though it is advanced by the carrier, is finally paid by the consumer, to whom it must be always charged in the price of the goods. As the expense of carriage, however, is very much reduced by means of such public works, the goods, notwithstanding the toll, become cheaper to the consumer than they could otherwise have done; their price not being so much raised by the toll as it is lowered by the cheapness of the carriage. The person who finally pays the tax, therefore, gains by the application more than he loses by the payment of it. . . . It is in reality no more than a part of that gain which he is obliged to give over in order to get the rest. It seems impossible to imagine a more equitable method of raising a tax. . . .

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Erie Teaches Supervisors to Teach

"Sure-fire method" gets results in job instructor training program—New and up-graded workmen taught to work safely, correctly and quickly

MORE than two thousand supervisors on the Erie are being trained in better methods of teaching employees under their jurisdiction the most effective way in which to carry out their assigned duties. As a part of a continuous training program, 1,500 men, from President R. E. Woodruff to men just starting as supervisors, have completed an extensive series of conferences in job instructor training. The others are now attending classes or will receive the instruction during the winter months when track foremen and supervisors can be released to take the training.

The method was organized by the Training Within Industry Division of the War Manpower Commission and developed by the Erie to serve its own particular needs. It follows in its essentials the features of successful programs used in foremanship training in other fields and departs from the ordinary in the use of a skeletonized training manual and in its dependence on a series of charts to stimulate discussion in the conference groups. However, no effort is made to confine the course to a limited number of sessions in which the entire field of a supervisor's duties and responsibilities must be covered.

At present there are three main subjects: (1) how to teach a man to do a job; (2) how to handle questions, objections or grievances; and (3) how to encourage and maintain enthusiasm. Further training schedules are being prepared on safety matters and other subjects.

The conference group sessions for executives and key men from the various departments and divisions on the railroads are conducted by the educational director of the Erie at its home office at Cleveland, Ohio. Approximately 225 of these men have been trained and many of them are now serving in the teaching force which carries on the training schedules at various points on the road for other supervisors. Included among the teachers who have gone from the Cleveland school are division superintendents, shop superintendents, general foremen, division car foremen, track supervisors, division engineers, passenger agents, general freight agents, claim agents, and accounting and clerical supervisors. Classes are held wherever groups can be assembled most conveniently and arrangements are made to insure that no one in a supervisory capacity will fail to receive the instruction.

Reasons for Training

In instituting this course of training it was decided that the subject of immediate importance was that of teaching men who directed the activities of others the "sure-fire" way to get a man to do a job safely, correctly, quickly and conscientiously. Because of war conditions, many thousands of present and new employees on the railroad were being required to learn new or higher skills and had to be trained on the job. It was obvious that much valuable supervisory time could be saved and higher standards of workmanship achieved if employee training was established with sound and correct methods common to all supervision rather than left to the diverse methods often pursued by individual supervisors.

Practical class demonstrations of a simple operation are used to illustrate the fact that merely telling a workman how to do a job is not enough to assure successful performance. Additional demonstrations clearly prove that showing alone is not a satisfactory method of teaching a learner to understand the work required of him. Throughout all lessons it is constantly emphasized that, "If the learner hasn't learned, the teacher hasn't taught." When, because of dramatized explanations, the class group realizes the weaknesses in the "telling" and "showing" methods, discussion of the "sure-fire" method is started.

Preparation for Instruction

Believing that it is equally as important for a supervisor to know how to get ready to instruct as it is actually to teach, much emphasis is given to the preliminary steps through which a supervisor must go to achieve success in training men. Most important of these is a thorough understanding of the job by the one who is to teach it. The preparation of a job break-down sheet is an essential part of the Erie method. The principal

ERIE JOB BREAKDOWN SHEET

Name of Job Assembly of E7 reducing valve

Purpose of Job To limit brake cylinder pressure

Important Steps	"Key Points" - knacks, hazards, "feel", timing, special information
1-Body in left hand	Large opening up
2-Apply regulating nut to body	Lip down Screw down until lip reaches 3/32-in. hole in body
3-Apply jam nut	Screw hand tight against regulating nut
4-Apply valve to seat in valve body	Valve seat down, use hair pin spring holder to guide valve into valve body
5-Apply valve stem	Connection end seated in countersunk hole in valve
6-Apply spring over valve stem	
7-Apply adjusting nut	Hex end up, insert first finger of left hand in hole at bottom of valve body and raise off its seat about 1/4 in. Then enter valve stem into regulating nut screw nut down hand tight
8-Apply cap nut to adjusting nut	Screw all the way down hand tight

A Breakdown Sheet Prepared by a Member of One of the Class Groups Conducted at Jersey City, N. J. Similar Sheets Must Be Prepared by Each Person Taking the Training Prior to His Demonstration of the Teaching Technique

steps of any operation are listed on this sheet, together with the key points to be stressed during training. This sheet serves as a guide for the instructor and is not given to the worker. Its use leaves little likelihood that any step required in the correct performance of any task can be overlooked and a trainee handicapped by his supervisor's oversight.

Tell—Show—Repeat—Discuss—Check

The essential features of the "sure-fire" method are simple. A learner must first be told how to do a job, then shown; then told and shown until the instructor feels satisfied that the learner has absorbed all that is necessary to perform the job in a satisfactory manner. When this point has been reached the learner must demonstrate his ability to the satisfaction of the teacher, being corrected immediately if he makes an error.

It may be necessary for the teacher to repeat again and again and have the learner make a number of attempts until there is a successful performance. Then the learner should be made to repeat to prove that he has learned. It is most important that the teacher should not take the word of the learner that he can do the work. The teacher must know that the learner knows. Discussing any problems involved often speeds learning by clearing up doubtful points about which the learner might hesitate to ask questions. Careful checking by the supervisor may be necessary for some little time before he can be sure that safe, quick, correct and conscientious performance is being obtained from a learner.

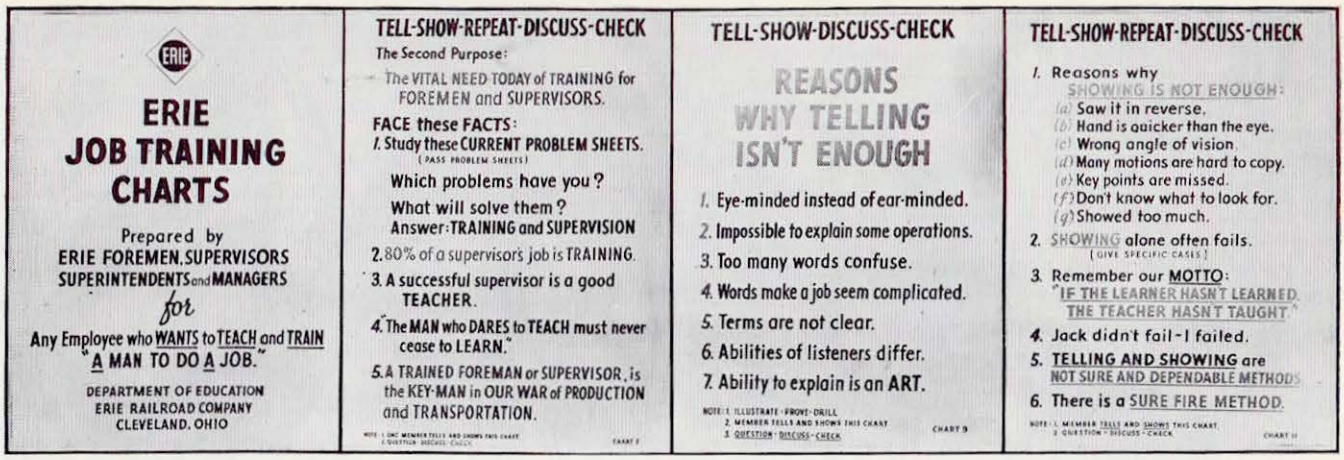
Practice Demonstrations

It is this method of worker instruction which the Erie program has been developed to teach. When it is felt by the instructor that members of a conference group of supervisors have thoroughly absorbed the basic principles which they are expected to follow, class demonstrations are given by each member. For these the member is allowed to choose any subject or operation which he might wish to teach and to select from among the others in the group somone to serve as a learner or trainee. Acting as the instructor, he must prove, to the satisfaction of the trainee and others in the group, that he is able to apply the principles of the "sure-fire" method.

The class member who is to demonstrate furnishes the instructor with a breakdown sheet of the job that he has chosen to teach. At the end of the practice teaching the class instructor reads the sheet aloud and invites the comments of the class. These are not slow in coming and the resultant discussion reemphasizes important requirements for success in job instruction.

These class practice demonstrations have resulted in many varied operations being broken down and taught.

A Group of Supervisors from the Car Department Who Received Their Training at Cleveland—These Men Were Called in from Eleven Different Points on the System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From these examples it will be apparent that this instruction cuts across departmental lines. A general foreman of passenger car repairs, for instance, had yardmasters, car foremen, a station master, an assistant agent and an assistant fuel supervisor in one group. Other classes are similarly mixed in their composition. The teaching of supervisors who later must teach can be carried on by anyone trained in the method; it does not depend upon special knowledge in any particular field of work.

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The Erie believes it has a "first" in the latest series of lessons to be released in the continuous training program. The lessons are on the subject of how to encourage and maintain enthusiasm, the type which is general and long lasting, not the pep-talk, temporary kind. With two thousand supervisors understanding that enthusiasm is a summation of the successful application of correct principles of employer-employee relations, it is expected that the lessons taught will have great influence over the entire system. The chart method is used in this program also. Originality in thought is not claimed for most if the ideas; only originality in presentation.

The present plan is new only in the sense that it represents the working out over a period since 1921 of the most effective means to achieve desired results. Earlier efforts were not always on a system-wide basis but, starting in 1929, courses relating to various railroad problems, including operation, foremanship, safety, salesmanship, traffic management and others, were given widely. Distribution of books of interest to discussion groups was made at the railroad's expense. Encouragement was given to all men, from laborers to executives, to further their education in any way they could. The present educational director was appointed in 1940 and a fully co-ordinated plan of training was established of which the three subjects for supervisors dealt with in this article are a part.

National Transportation Policy—Whose Job?

"Railroad performance under war conditions has been remarkable and amply demonstrated—if any proof is necessary—that the railways are still the backbone of our transportation system. How much longer the railroads will be able to continue this pace is a matter of conjecture, especially in face of their inability to obtain additional equipment other than locomotives and some replacements of other equipment. . . .

"Regardless of what national policy may be worked out, and what eventual relationship between competitive forms of transportation may be established in the future, every existing form of transportation must be fully utilized in this emergency.

"No nation has realized the value of transportation more completely than ours has, no nation relies on it more completely, but, as the recent report of the National Resources Planning Board points out, we have no national policy, and we have no permanent mechanism for carrying out a national policy. The President has transmitted this report to Congress."

—From a Speech by Undersecretary of Commerce Taylor.

These kind words about the railroads from Wayne Taylor are appreciated—but why do you suppose he mentions only the National Resources Planning Board in connection with the formulation of national transportation policy, ignoring the Board of Investigation & Research established *by Congress* to perform this function?

equipment supply, cars and locomotives, cannot be increased to any appreciable degree. We know that all of us, both on the railroad and the shipper sides, can do even better than we did last year. Shipper-carrier cooperation is an elastic quantity that can be stretched to meet new requirements. It seems very obvious that our hope for continued success in this essential business of transportation lies in further refinement, further extension, further support for the partnership program that was our salvation in 1942."

"There is a limit to this transportation barrel and I think all of you will agree that we have about reached that limit," Fred S. Keiser, associate director, Division of Railway Transport of the Office of Defense Transportation, said, "What are we going to do about it?

"No one, for a minute, would be willing to see the war effort cramped. Likewise, no one would want to be a party to any restriction of the lend-lease program. We come, then, to the only possible place where an improvement in the situation might be worked out, and that is to reduce the domestic transportation requirements to a positive minimum. It is a well recognized fact that American business, as heretofore transacted, has not only enjoyed the best transportation known in the world, but it is equally true that American business has made the most profligate use of transportation of any business in the known world.

"As badly as I hate to admit it, American business is still being conducted on the theory that it can secure and use all the transportation it wants, whether such transportation involves cross-hauling, circuitous routing, route selectivity, or whatnot. There is a squandering of transportation by American business that was not justified in 1942 and cannot be permitted in 1943 if our transportation plants are to stand up. I know of commodities manufactured in New York and sold on the Pacific Coast, when those same commodities are manufactured on the Pacific Coast in volume. Likewise, I know of commodities manufactured in quality and quantity in the Chicago district that could be bought in the Chicago district but are actually being moved distances of 1,000 miles in order to serve the trade in the Chicago district.

"I know that the freight equalizations made to consumers in order to neutralize the location of a producer with reference to that particular consumer run into millions of dollars annually and I likewise know that on 95 per cent of these equalizations there is an excessive use of transportation. The very word "equalization" carries with it the thought that a transportation disadvantage is being neutralized and a transportation disadvantage can very properly be construed under present conditions as an unnecessary and unwarranted use of transportation.

"Likewise, American business has always routed freight as it saw fit to such an extent that circuitous routing is widespread in the handling of the domestic business of this country. Now, undue circuitous routing simply means an excessive use of equipment, motor power and manpower and it must be curtailed. There is no place for it now and I tell you equally as earnestly that if you shippers don't cut out circuitous routing and don't limit, so far as possible, your shipments to reasonably direct routes, you are going to lose a right that to you is extremely precious, and that is the right to route your freight. This is coming, just as certain as tomorrow is coming, unless there is a decided improvement in your present methods of routing freight.

"Likewise, solicitation on the part of the railroad is still a widespread practice. Solicitation is the direct rail response to the shipper's right to control the routing of freight. When the shipper loses that right, a large portion of the incentive to maintain soliciting forces will disappear. I would be the last man on earth to advocate the loss of a job for a man, particularly a man who has spent a lifetime at it, but I can readily see, under present conditions, how the soliciting forces of the railroads could be utilized in much more needed avenues of rail transportation work than that of soliciting freight.

"Certain it is that the practice of shippers in listening to the pleas of affable solicitors, and as a consequence routing freight all around Robin Hood's barn, with its consequent squandering of transportation, must be curtailed. You should curtail it while you yet have the power and as distasteful as the job is to have to tell you, my duty forces me to state frankly to you that unless you voluntarily do this, it not only will be done for you but it will undoubtedly be done in a manner far more distasteful to you than would be the case if you had done it yourselves."

Railroad Presidents' Day

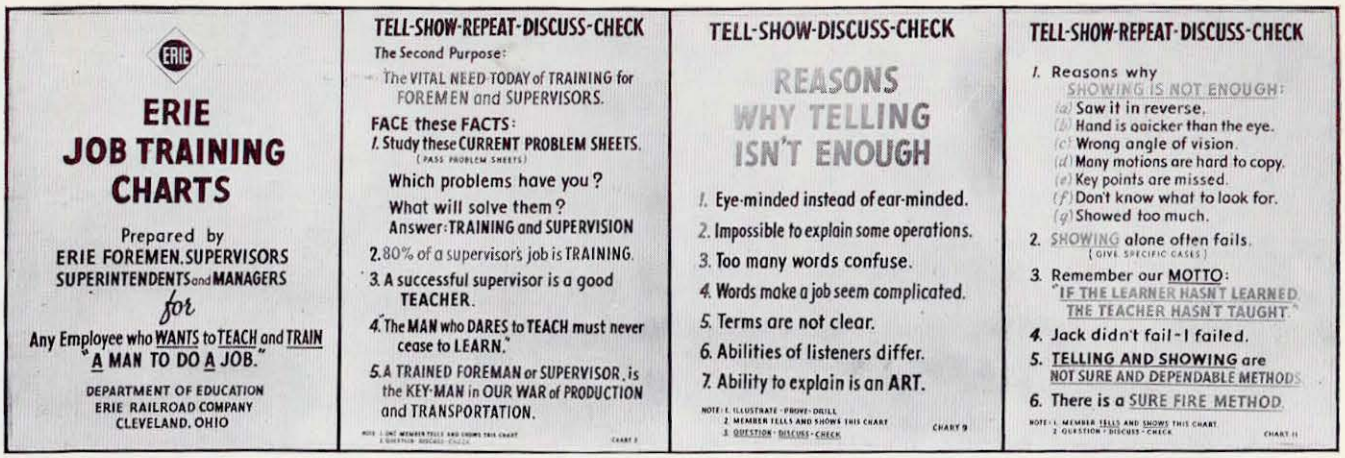
A railroad presidents' day was celebrated at a luncheon sponsored by the Board and the Traffic Club of Chicago. The speakers were J. L. Beven, president of the Illinois Central; Ralph Budd, president of the Chicago, Burlington & Quincy; H. A. Scandrett, trustee of the Chicago, Milwaukee, St. Paul & Pacific; and F. G. Fitz-Patrick, chief traffic officer of the Chicago & North Western, who spoke for R. L. Williams, chief executive officer who was unable to attend.

Mr. Beven described the performance of the railroads since 1939. He attributed their success to (1) physical condition, (2) skill in operation developed through 10 depression and 3 war years, (3) loyal workers, (4) cooperation of shippers and travelers, (5) smooth-working arrangements with governmental users of transportation, and (6) planning.

Mr. Budd suggested the following program for the railroads as a counterpart to what the shippers are doing to aid transportation: (1) Place loads and remove empties promptly; load and unload company material immediately. (2) Keep the highest possible percentage of cars in serviceable condition for maximum loading and make repairs in train yards when practicable. (3) Place a commodity card on every empty closed car so that cars can be properly applied. (4) Make complete yard reports at all stations daily and check these reports constantly. (5) Employ sufficient traveling car agents to keep local operating officers informed of irregularities. (6) Avoid holding cars for prospective loading. (7) Pull and forward loaded cars on first available freight train. (8) Avoid placing high class cars for contaminating commodities. (9) Co-operate with shippers and receivers to avoid accumulation of loads and empties.

Mr. Scandrett referred to the long hauls that the war demands and anticipated that the traffic load in 1943 will be heavier than in 1942. So far, he said, authorizations for new equipment are far less than our needs and consequently the problem of handling the traffic with existing equipment is going to be a difficult one.

Mr. Williams' message, as presented by Mr. Fitz-Patrick, could not visualize a continuing increase in the volume of freight traffic because: (1) Production of steel and lumber has been on a 100 per cent basis for some time. (2) The coal miners presently work five days per week, and it is doubtful if they can be induced to work more. (3) The construction of plants for the production of war materials has about reached its peak, and (4) Production for civilian consumption, other than production of food and food products, is decreasing constantly. The message anticipated a continuing and increasing congestion on passenger trains.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Encouraged in their belief that the success of the job instruction series of conferences justified the extension of the principles of the "sure-fire" method to other fields, the Erie next directed its attention to the preparation of charts and lessons on handling questions, objections or grievances. In these lessons care is taken to limit the subject matter so that in all such cases handled by any supervisor he will arrive at an end point where, if the principles are followed, a fair and mutually satisfactory decision will be rendered. It is made clear that prompt action produces maximum mutual benefits in every case.

The Erie believes it has a "first" in the latest series of lessons to be released in the continuous training program. The lessons are on the subject of how to encourage and maintain enthusiasm, the type which is general and long lasting, not the pep-talk, temporary kind. With two thousand supervisors understanding that enthusiasm is a summation of the successful application of correct principles of employer-employee relations, it is expected that the lessons taught will have great influence over the entire system. The chart method is used in this program also. Originality in thought is not claimed for most if the ideas; only originality in presentation.

The present plan is new only in the sense that it represents the working out over a period since 1921 of the most effective means to achieve desired results. Earlier efforts were not always on a system-wide basis but, starting in 1929, courses relating to various railroad problems, including operation, foremanship, safety, salesmanship, traffic management and others, were given widely. Distribution of books of interest to discussion groups was made at the railroad's expense. Encouragement was given to all men, from laborers to executives, to further their education in any way they could. The present educational director was appointed in 1940 and a fully co-ordinated plan of training was established of which the three subjects for supervisors dealt with in this article are a part.

National Transportation Policy—Whose Job?

"Railroad performance under war conditions has been remarkable and amply demonstrated—if any proof is necessary—that the railways are still the backbone of our transportation system. How much longer the railroads will be able to continue this pace is a matter of conjecture, especially in face of their inability to obtain additional equipment other than locomotives and some replacements of other equipment. . . .

"Regardless of what national policy may be worked out, and what eventual relationship between competitive forms of transportation may be established in the future, every existing form of transportation must be fully utilized in this emergency.

"No nation has realized the value of transportation more completely than ours has, no nation relies on it more completely, but, as the recent report of the National Resources Planning Board points out, we have no national policy, and we have no permanent mechanism for carrying out a national policy. The President has transmitted this report to Congress."

—*From a Speech by Undersecretary of Commerce Taylor.*

These kind words about the railroads from Wayne Taylor are appreciated—but why do you suppose he mentions only the National Resources Planning Board in connection with the formulation of national transportation policy, ignoring the Board of Investigation & Research established *by Congress* to perform this function?

A General View of the Bridge During the Raising Operations

Raise Long Bridge Under Traffic To Clear Flood Waters

Jack up 1,800-ft. truss and girder structure of nine spans, including a 267-ft. swing span, by unusual procedure, to remove threat of high water to important traffic

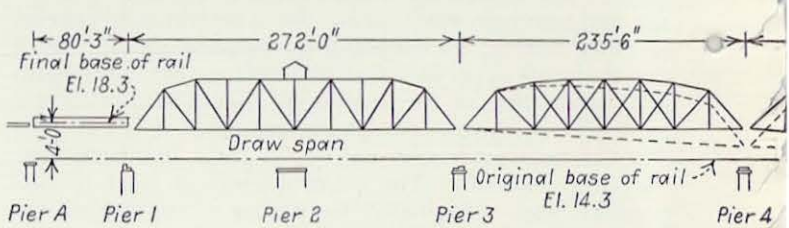
HIGH water in the future will no longer menace one large railway bridge of the country, as the result of a recent engineering project, which involved raising the bridge, a single-track, nine-span structure, 1,800 ft. long, a distance of four feet vertically. Unusual because of its scope, the work is of interest also because of the method employed, permitting operating grades on different spans of the structure of nearly 0.9 per cent during most of the work, and also because it was carried out under a traffic comprising as many as 40 train and engine movements daily, without interruption or delay other than the usual slow orders that are ordinarily necessary in bridge operations of much smaller magnitude.

The bridge involved, constructed and put in service in 1908, lies in a general east and west direction and includes, from west to east, in order, an 80-ft. through plate girder span, a 267-ft. through truss swing-type drawspan, six 232-ft. through truss fixed spans, and a 40-ft. deck plate girder span; its overall length is 1,804 ft. All of the trusses are of the Pratt type, with broken upper chords, and all of the spans are supported on reinforced concrete piers, the deepest being approximately 115 ft. from base to bridge seat. Adding to the size of project, and complicating its details, was considerable related work on both sides of the waterway crossed, including the extending and raising of a street grade separation structure immediately at the west end of the main bridge.

Complete Drawspan Raise First

All of the bridge raising was done with jacks, in successive stages. However, in the interest of completing the raising of the drawspan to its final level along with the auxiliary work at this point, in the shortest possible time, the full four-foot raise of the different spans, in two-foot lifts, was carried across the bridge from west to east, involving only two or three spans at a time.

In the first jacking operation, following the placing of the new underpass girders at the west end of the bridge, the west end of the 80-ft. girder approach span at the west end of the main structure was raised two feet. At



Sketch Plan of the Bridge During One

the same time, the east end of this approach span, as well as both ends of the adjoining drawspan, were raised one foot, along with the west end of the adjacent fixed span. Then the east end of the approach girder span, the drawspan throughout, and the west end of the adjacent truss span, were raised an additional twelve inches, making a two-foot drop or runoff in the fixed span. Next, the ends of both spans at Pier 4 were raised two feet, making a two-foot runoff in the span between Piers 4 and 5.

Having accomplished this half raise of the spans to Pier 4, from the west end, the operations, in the interest of completing the final raise of the drawspan, were carried back to the west end of the bridge, and in the next phase of the work, the 80-ft. girder approach span, the swing span, and the west end of the fixed truss span between Piers 3 and 4, were raised an additional two feet to final elevation. With the bridge up to Pier 3, from the west, at final level, and with a drop of two feet in the span between Piers 3 and 4, and an additional drop of two feet in the span between Piers 4 and 5, the next operation involved the raising of the ends of the spans at Pier 5 through their first two feet, and the ends of the spans at Pier 4 an additional two feet to final grade, again providing a drop of two feet over the span between Piers 4 and 5, and a succeeding drop of two feet over the span between Piers 5 and 6. Continuing in this manner, the full 4-ft. raise was carried across the bridge to its east end, in each operation limiting the runoff to a height of two feet in any one of the fixed spans.

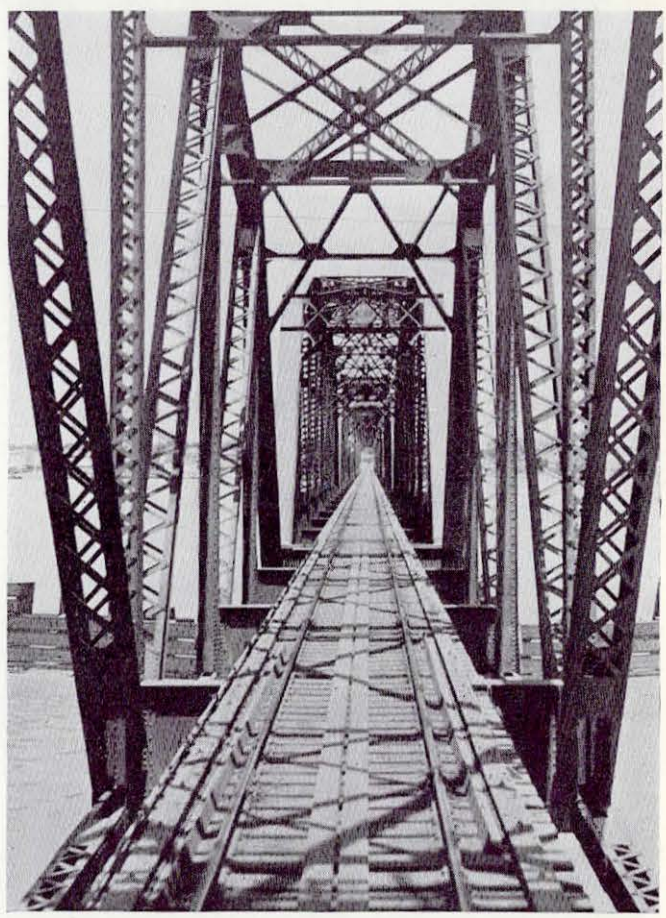
100- and 500-Ton Jacks Employed

All of the span-raising operations were carried out with 100-ton and 500-ton hydraulic jacks, the hydraulic pumps for the operation of the jacks being located on the bottom chords of the span trusses, and being propelled by air from a compressor which was located at the east end of the bridge. The air lines from the compressor and the pipe lines from the pumps to the jacks were carried on the bridge deck between the track rail and the ends of the ties.

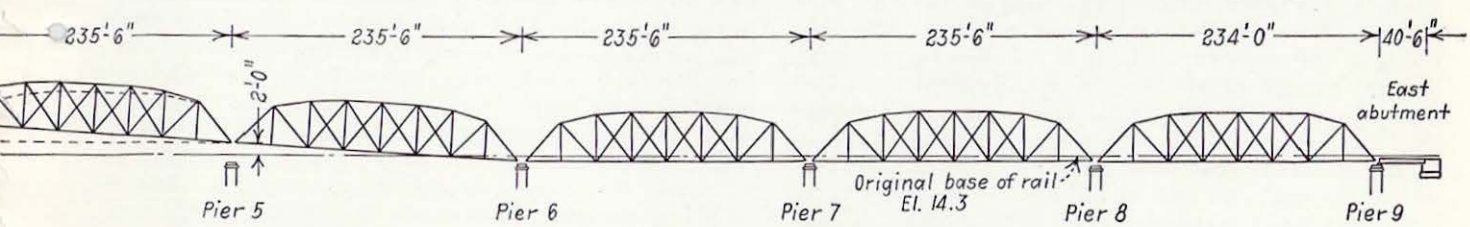
During the jacking operations, bearings were followed up with wood blocking, first inserting a layer of one-inch material, then two layers of one-inch material, and then, as the raising progressed, replacing the two layers of one-inch material by one layer of three-inch material—this procedure being repeated for each three-inch lift. Throughout the work, blocking was kept to within less than one inch of the bottom of the bearing of the bridge shoes as a precaution against damage to any part of the bridge in the event of a failure of the jacking equipment. After twelve inches of raise had been made, the wood blocking was removed and was replaced with a steel grillage made up of 12-in. I-beams. Subsequently, each of the following 12-in. lifts was made with wood blocking and then replaced with steel grillages, the grillages, in each case, when in place, being required to support the bridge spans until the full four-foot raise had been made. While the grillages supported the bridge spans, the jacks were reset and the raising operations were continued until the entire four-foot raise throughout the length of the bridge had been completed.

Employed Heavy Jacking Beams

All of the jacking of the truss spans was done through a jacking beam arrangement in conjunction with the end floorbeams of the spans, the jacking beam being necessary because the floorbeams alone, and their connections with the trusses, were not sufficiently strong to take the dead load reactions from the spans. In the arrangement employed, web stiffener angles were provided in the floorbeams directly over the points on the piers where the jacks were to be placed, and, during the actual jacking operations, a heavy jacking beam was placed across the deck of the bridge, above the track rails, directly over the end floorbeam, with metal blocking members between it and the floorbeam, directly in line with the new floorbeam stiffeners. At the ends of each jacking beam, stirrups were extended down and around the pins of the span, to transfer the load to these points, and, just prior to actual jacking operations, the jacking beam was pre-



Looking Through the Nine Spans of the Bridge After the Completion of the Work



of the Stages of the Raising Operations. Note the Grades on the Spans Between Piers 4 and 6

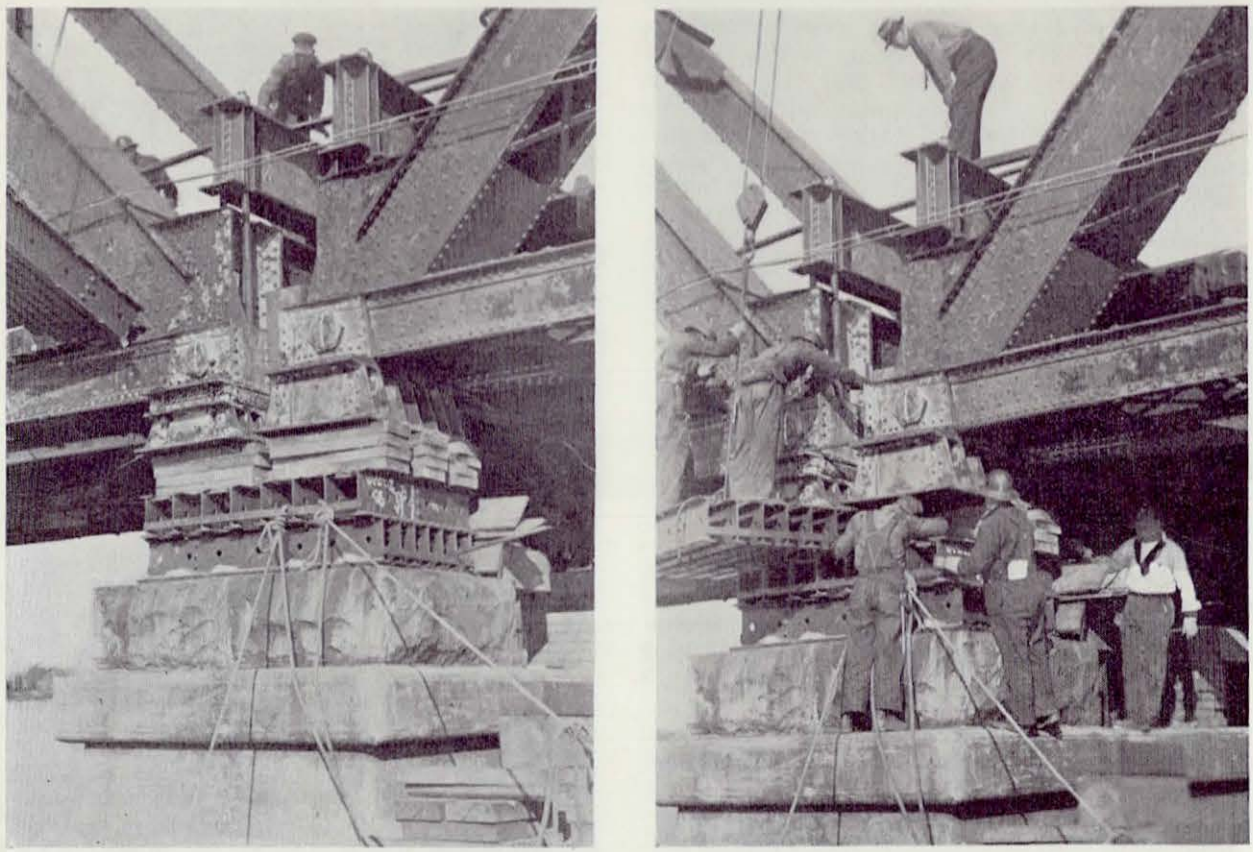
stressed by tightening the nuts on the upper ends of the stirrups. No jacking was allowed under the floorbeams of the spans until the jacking beams were in place and had been properly pre-stressed to avoid imposing loads on the end floorbeams in excess of those for which they were designed.

Intricate as was the jacking of the fixed spans, the jacking of the drawspan was still more intricate and difficult. In the latter work, the jacking of both the ends and the center of the span required that a definite distribution of loads on the jacks be maintained and checked constantly by truss deflections.

In the raising of the drawspan, 100-ton jacks were placed under the center of the span and 500-ton jacks between the center and ends of the span before repeating the procedure.

After the drawspan had been raised to final grade, the rack was removed and was replaced with a drum girder having a depth of 48 in., the full height of the raise. A new rack was then installed on top of the drum girder and a new operating pinion gear provided.

Following this, the pivot and wedge bearing grillages were encased with concrete and the swing span was restored to operation. The drawspan was closed to river navigation for a period of 45 days, but, as was the case while raising the fixed spans, all of the jacking operations were scheduled between trains, without interference with rail traffic.



Stages in the Raising Operations at the Ends of Two Fixed Spans

Left—Shows wood blocking and grillage placement during the jacking operations. Here, two 12-in. steel grillages are in place, with wood blocking above, which was inserted as the last 12-in. raise was made. Right—This picture, which was taken a few minutes later than the picture at the left, shows the wood blocking being removed and being replaced from the outside of the spans with a 12-in. layer of grillage. Both pictures show the ends of the jacking beams and the strap arrangement used to transmit the load from the jacking beams to the end pins.

under the ends. The contractor's original plan of procedure called for keeping the ends of the trusses ¾ in. higher than the center, while jacking simultaneously at the three points. It developed, however, that it would be practically impossible to maintain this relation with any degree of accuracy while jacking, so it was decided to follow a procedure in which the ends of the span were first raised 1⅝ in. above the center, and the center then raised to within ⅝-in. of the ends. Following this practice, the maximum end reaction was 144,000 lb., which was reduced to about 80,000 lb. as the center was brought up. After the initial lift at the ends and center had been made, succeeding lifts were made in one-inch intervals, first at the ends and then at the center. Readings taken from convenient starting points were checked at one-inch rise intervals to insure the proper relationship between the ends and center.

Special precautions included in the specifications for the work in the interest of safety required that no jacking be permitted during high winds or other conditions which might endanger the safety of operations; that all upward movements of the span during jacking operations be followed closely with blocking under the span bearings to pick up the load in case of a failure of any of the equipment; that no live load be permitted on the bridge while any portion of the structure was supported on jacks; that live load on the bridge be prohibited until all bearings had been lowered on to the grillages or temporary wood blocking provided for following up jacking operations; that all dead and live loads during train operations be carried to the piers through the bearings; and that, in so far as possible, the concrete encasement of the grillages under the main bearings be placed promptly after

train movements so as to give the longest time possible for the initial set and hardening of the concrete before live load was permitted to pass over the structure.

In jacking the bridge to final elevation, a check of the alinement of individual spans showed that they had been moved slightly out of position laterally, either up or down stream, the movement in some cases being as much as ¾ to ⅞ in. off the center line of the pier. While it might have been a very difficult problem to correct this misalinement, the method used proved it to be a relatively simple operation. In this method, the span was jacked back to position, in each case employing a narrow strip of soft wood under the edge of the jack base on the side toward which it was desire to move the span. Straining the jacks under this arrangement caused their tilting, with the desired lateral movement of the span, this being continued until the desired distance was obtained.

When the spans were in final position, the four layers of steel I-beam grillage under each fixed span bearing shoe, as well as under the center bearing member of the drawspan, were bolted together, and the bottom layers of the grillages were secured to the concrete piers by the original anchor bolts. Following this, steel dowels were grouted into the old bridge seat, reinforcing steel was placed entirely around the grillage beams, and concrete was poured up to the new level of the bridge shoes. The concrete employed was mixed and poured from a plant set up on a steel barge, and, as the work at each pier was finished, the barge was towed to the next pier for completion of the work at that location, thus continuing the work until the last pier at the east end of the bridge was reached, for which pier the concrete was poured from a plant set up on the east bank of the waterway.

Mid-West Board Prepares for Harder Job

PREPARATIONS to tackle the harder transportation job that lies ahead were made by the Mid-West Shippers Advisory Board at its annual meeting at Chicago on January 7. All executive officers were re-elected for the ensuing year. The importance of the transportation problem of the future was summarized by Fred A. Schleifer, general chairman, who said:

"A long look ahead reveals that we will have to tackle a much harder job before victory is won. We are in a cataclysmic period of life and everything we hold dear is threatened; therefore, we must now have the loyal, concerted, enthusiastic voluntary co-operation of every receiver and shipper, even though that receiver or shipper receives or ships only one car annually. We want that car unloaded and released promptly to the railroad in a clean condition so that the next fellow can proceed immediately with loading and keep that car rolling.

"As you know, if we fail to do this voluntarily, there will be more directives and as each new directive is issued, our system of free voluntary co-operation suffers in direct proportion to the degree of restriction imposed. Eventually, that may lead to transportation priorities in one form or another, an utterly undesirable arrangement which would cost the shipper more than it would the railroads. I say these things because Senator Reed is considering the advisability of legislating a demurrage rate and Commissioner Johnson has stated that 'if the unloading program isn't hastened, the Interstate Commerce Commission will make demurrage charges that will make time and one-half the cheaper process.' I also say these things because I believe the time has come to call a spade a spade.

"We must face the facts, and when I say that I don't want to be misunderstood. We are on the best of terms with the transportation authorities in Washington and we know that they do not want to issue any directives which in their judgment are not absolutely necessary. They want us to do the job through voluntary co-operation in the American way, but, if we fail to produce the results, they must step in through the medium of directives and produce the results. The time for conversation and inaction is definitely past. Those of you who have been giving your full support and manifested interest in these meetings are not to blame, but the chiseler who continues to sabotage railroad transportation as well as our own efforts through his un-American slow-down tactics, ignorance or sloppy habits, in my opinion, is largely responsible for many of the directives which have been issued. It is up to all of us, especially our Vigilance committees, to track these chiselers down and put them out of business if necessary, by use of the embargo, so that the rest of us who want to play the game in the American way can survive."

Shippers' Co-operation Helps Break Records

"The greatest production of rail transportation ever known, recorded in 1942, with less equipment than in other peak years, could not have been accomplished if the shippers had not adopted an intelligent and realistic program of joint responsibility for maximum use of cars and locomotives," according to L. M. Betts, manager, Railroad Relations section, Car Service division of the Association of American Railroads. "Practically every record of car and locomotive efficiency ever made was exceeded in 1942 because railroad equipment had to be used more intensively than ever before to meet the expanded transportation demands of the greatest war effort ever undertaken by this country. If shippers and receivers had failed to contribute unparalleled efforts in the prompt handling and heavy loading of freight cars, the railroads alone could not have met the challenge. Because there existed in the Shippers Advisory Boards unified, progressive national leadership, spurring both railroads and shippers to new heights of performance, one of the greatest of the home front victories has been won.

"This is a tremendously significant record. It is an important example of the triumph of the free forces of American enterprise, for the preservation of which this war is being fought. The privately-owned railroads and an unregimented body of shippers have voluntarily combined their energy and intelligence to perform a task essential to the preservation of our national institutions. Can you imagine a government-operated railroad system and a compulsion-dictated body of shippers ever accomplishing such happy results?

"It is unnecessary to detail the precise figures of all records made in railroad transportation in 1942. Certainly it is obvious that the new peak of around 41 tons in the average load of carload freight was the direct effect of consignor and consignee co-operation, and the new high in average miles per car per day of about 49 was greatly aided by their prompt loading and unloading of cars. Even such records as increased train performance and reduced fuel consumption relate to heavy loading because the reduction in proportion of "dead" to "live" load provides more economical operation.

"We must assume that the volume of traffic in 1943 will continue above 1942 levels. We know that the

equipment supply, cars and locomotives, cannot be increased to any appreciable degree. We know that all of us, both on the railroad and the shipper sides, can do even better than we did last year. Shipper-carrier cooperation is an elastic quantity that can be stretched to meet new requirements. It seems very obvious that our hope for continued success in this essential business of transportation lies in further refinement, further extension, further support for the partnership program that was our salvation in 1942."

"There is a limit to this transportation barrel and I think all of you will agree that we have about reached that limit," Fred S. Keiser, associate director, Division of Railway Transport of the Office of Defense Transportation, said, "What are we going to do about it?

"No one, for a minute, would be willing to see the war effort cramped. Likewise, no one would want to be a party to any restriction of the lend-lease program. We come, then, to the only possible place where an improvement in the situation might be worked out, and that is to reduce the domestic transportation requirements to a positive minimum. It is a well recognized fact that American business, as heretofore transacted, has not only enjoyed the best transportation known in the world, but it is equally true that American business has made the most profligate use of transportation of any business in the known world.

"As badly as I hate to admit it, American business is still being conducted on the theory that it can secure and use all the transportation it wants, whether such transportation involves cross-hauling, circuitous routing, route selectivity, or whatnot. There is a squandering of transportation by American business that was not justified in 1942 and cannot be permitted in 1943 if our transportation plants are to stand up. I know of commodities manufactured in New York and sold on the Pacific Coast, when those same commodities are manufactured on the Pacific Coast in volume. Likewise, I know of commodities manufactured in quality and quantity in the Chicago district that could be bought in the Chicago district but are actually being moved distances of 1,000 miles in order to serve the trade in the Chicago district.

"I know that the freight equalizations made to consumers in order to neutralize the location of a producer with reference to that particular consumer run into millions of dollars annually and I likewise know that on 95 per cent of these equalizations there is an excessive use of transportation. The very word "equalization" carries with it the thought that a transportation disadvantage is being neutralized and a transportation disadvantage can very properly be construed under present conditions as an unnecessary and unwarranted use of transportation.

"Likewise, American business has always routed freight as it saw fit to such an extent that circuitous routing is widespread in the handling of the domestic business of this country. Now, undue circuitous routing simply means an excessive use of equipment, motor power and manpower and it must be curtailed. There is no place for it now and I tell you equally as earnestly that if you shippers don't cut out circuitous routing and don't limit, so far as possible, your shipments to reasonably direct routes, you are going to lose a right that to you is extremely precious, and that is the right to route your freight. This is coming, just as certain as tomorrow is coming, unless there is a decided improvement in your present methods of routing freight.

"Likewise, solicitation on the part of the railroad is still a widespread practice. Solicitation is the direct rail response to the shipper's right to control the routing of freight. When the shipper loses that right, a large portion of the incentive to maintain soliciting forces will disappear. I would be the last man on earth to advocate the loss of a job for a man, particularly a man who has spent a lifetime at it, but I can readily see, under present conditions, how the soliciting forces of the railroads could be utilized in much more needed avenues of rail transportation work than that of soliciting freight.

"Certain it is that the practice of shippers in listening to the pleas of affable solicitors, and as a consequence routing freight all around Robin Hood's barn, with its consequent squandering of transportation, must be curtailed. You should curtail it while you yet have the power and as distasteful as the job is to have to tell you, my duty forces me to state frankly to you that unless you voluntarily do this, it not only will be done for you but it will undoubtedly be done in a manner far more distasteful to you than would be the case if you had done it yourselves."

Railroad Presidents' Day

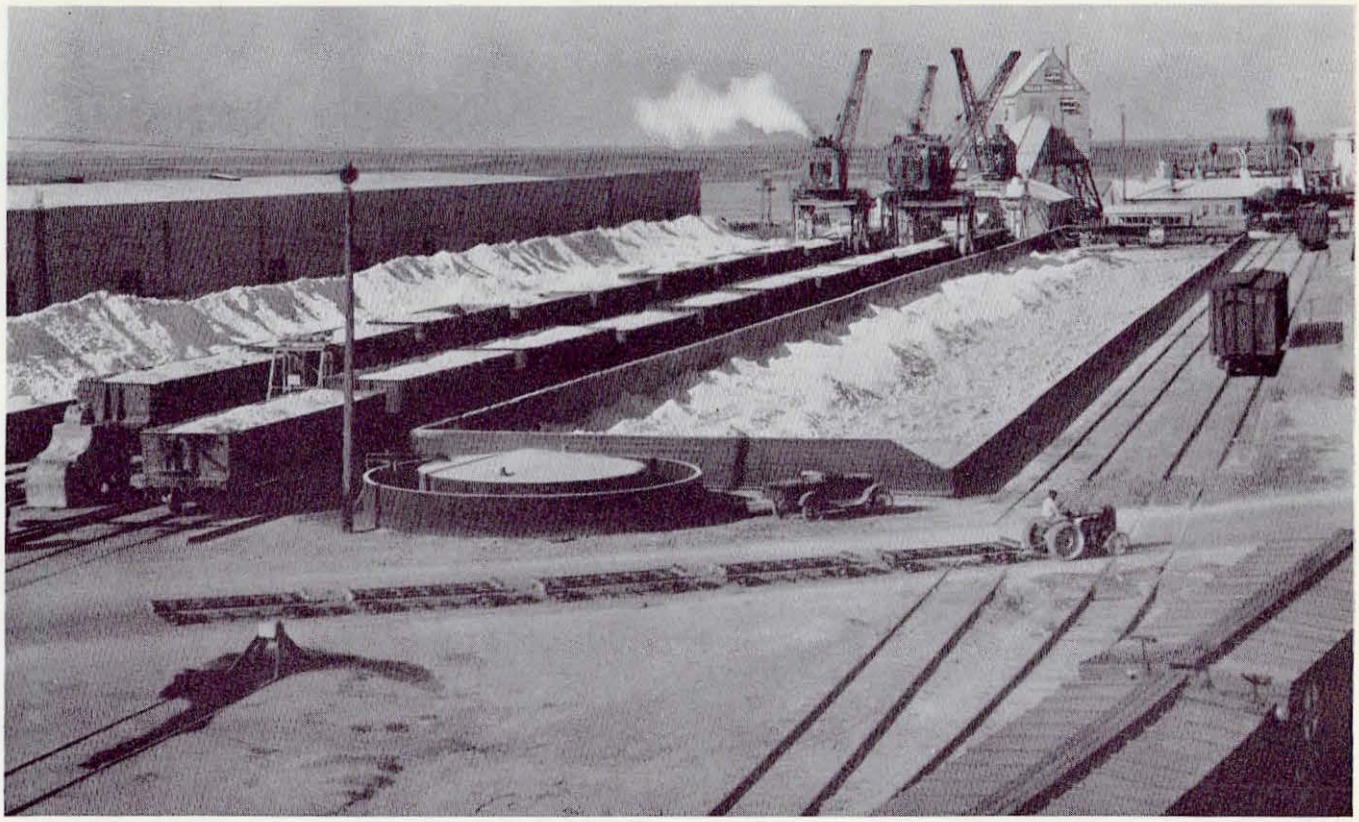
A railroad presidents' day was celebrated at a luncheon sponsored by the Board and the Traffic Club of Chicago. The speakers were J. L. Beven, president of the Illinois Central; Ralph Budd, president of the Chicago, Burlington & Quincy; H. A. Scandrett, trustee of the Chicago, Milwaukee, St. Paul & Pacific; and F. G. Fitz-Patrick, chief traffic officer of the Chicago & North Western, who spoke for R. L. Williams, chief executive officer who was unable to attend.

Mr. Beven described the performance of the railroads since 1939. He attributed their success to (1) physical condition, (2) skill in operation developed through 10 depression and 3 war years, (3) loyal workers, (4) cooperation of shippers and travelers, (5) smooth-working arrangements with governmental users of transportation, and (6) planning.

Mr. Budd suggested the following program for the railroads as a counterpart to what the shippers are doing to aid transportation: (1) Place loads and remove empties promptly; load and unload company material immediately. (2) Keep the highest possible percentage of cars in serviceable condition for maximum loading and make repairs in train yards when practicable. (3) Place a commodity card on every empty closed car so that cars can be properly applied. (4) Make complete yard reports at all stations daily and check these reports constantly. (5) Employ sufficient traveling car agents to keep local operating officers informed of irregularities. (6) Avoid holding cars for prospective loading. (7) Pull and forward loaded cars on first available freight train. (8) Avoid placing high class cars for contaminating commodities. (9) Co-operate with shippers and receivers to avoid accumulation of loads and empties.

Mr. Scandrett referred to the long hauls that the war demands and anticipated that the traffic load in 1943 will be heavier than in 1942. So far, he said, authorizations for new equipment are far less than our needs and consequently the problem of handling the traffic with existing equipment is going to be a difficult one.

Mr. Williams' message, as presented by Mr. Fitz-Patrick, could not visualize a continuing increase in the volume of freight traffic because: (1) Production of steel and lumber has been on a 100 per cent basis for some time. (2) The coal miners presently work five days per week, and it is doubtful if they can be induced to work more. (3) The construction of plants for the production of war materials has about reached its peak, and (4) Production for civilian consumption, other than production of food and food products, is decreasing constantly. The message anticipated a continuing and increasing congestion on passenger trains.



Sulphur Now Moves All-Rail in Trainload Lots

Good Railroading on a Texas Line

Gulf, Colorado & Santa Fe does an efficient job in handling war-time transportation

FOR the first ten months of 1942, the Gulf, Colorado & Santa Fe shows a 223 per cent increase in passenger traffic over the similar period in 1941, and a 302 per cent increase over 1940. Freight revenues for the same period show a 40 per cent increase over 1941 and a 73 per cent increase over 1940. This largely increased business was brought about, as far as passenger traffic is concerned, by the location of a large number of military establishments in the territory served by the G. C. & S. F., resulting in large and frequent troop movements over the railway. The shipments to and from military establishments have also had their effect on the freight revenues, but a large percentage of the increase is attributable to the diversion of oil and sulphur traffic to all-rail movement, brought about by the diminution of gulf and coastwise shipping.

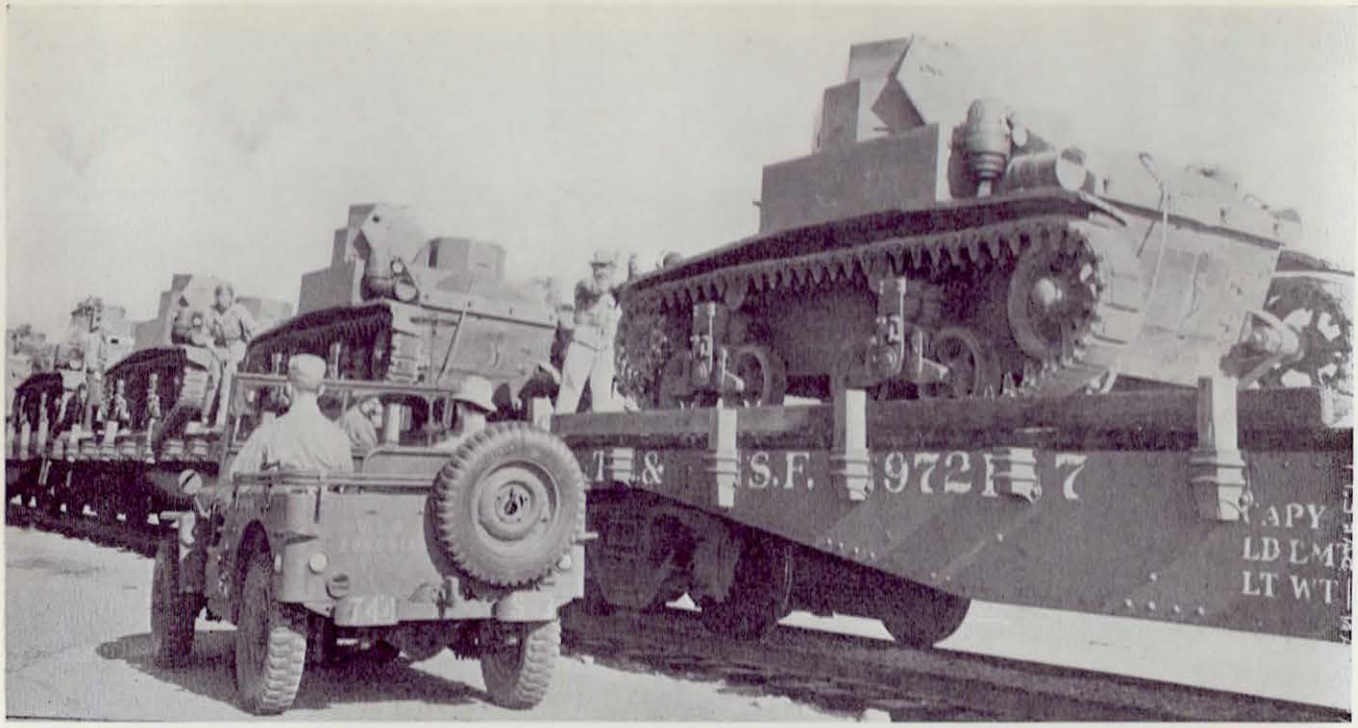
The G. C. & S. F. consists of that portion of the Santa Fe system south of Purcell, Okla., and east of Sweetwater, Texas, as indicated on the accompanying map, and comprises a total of 2,107 miles. It is operated as one of the separate grand division units of the Santa Fe and serves as a most important feeder for the system as a whole. Because of its geographical location, however, it encounters problems of operation different from other parts of the railroad.

For operating purposes, it is divided into three divisions, of aproximately equal mileage. The Northern division includes the main line and branches between Purcell, Okla., and Cleburne, Texas; and the line from Cleburne northeast to Paris, Texas, via Dallas. The Southern division comprises the main line between Cleburne and Temple, Temple and Bellville, and Temple and Sweetwater; as well as the Fort Worth-Brownwood line and several branches. The Gulf division comprises the important main lines and branches south and east of Bellville; as well as the lines east of Somerville in eastern Texas and western Louisiana.

Diversified Traffic

While cotton is the chief agricultural product originating along the lines of the G. C. & S. F., a wide variety of other agricultural produce, including rice, tomatoes and other perishable commodities, is also loaded in this territory. While the wheat grown along the line does not amount to as much as in Santa Fe territory further north, in normal years an extremely large movement of wheat goes to Galveston for export. Even with the export traffic eliminated, however, there was a reasonably good movement of grain into Galveston last year.

The east Texas line of the Gulf division traverses the



Troop Trains Have Resulted in a 300 Per Cent Increase in Passenger Traffic on the G. C. & S. F.

timber country adjacent to the Sabine river valley and the construction of military encampments has materially increased the movement of lumber cut along this line. With the reduction of coastwise and export shipping, the G. C. & S. F. is now called upon to handle trainloads of sulphur and oil for long distances whereas, formerly, most of this traffic was handled only short distances to ports for trans-shipment to boats. Another movement in train load lots takes place each spring when feeder cattle are moved from winter grazing in Texas to Kansas and Oklahoma for summer feeding.

An entirely new type of traffic resulted from the location of numerous military establishments along the lines of the G. C. & S. F. These have required the shipping of large quantities of supplies and construction materials and large troop movements have also taken place. Apart from the troop movements, the passenger service consists of important through trains between Chicago and Galveston and between Los Angeles and Galveston, via Houston in each case, as well as a steadily growing local service. The troop movements, plus the oil, sulphur and livestock movements, give the G. C. & S. F. an unusually high percentage of traffic moved in trainload lots.

The Oil Movement

Very little crude oil is handled on the G. C. & S. F., but the movement of refined petroleum products from the refineries at Texas City, Bay City, Chalmers, Houston, Gay Hill, Ardmore and Winniwood has increased largely in the past year. In addition, some oil is received from connecting lines at Fort Worth and Gainesville and gasoline is moved from Borger and other West Texas refineries to the Gulf ports. The sudden diversion of oil shipments from water to all-rail movement, however, accounts for by far the greatest tonnage of this commodity.

A large percentage of the oil comes from the refineries in Texas City, which is located on the Texas City Terminal, a switching line owned jointly by the Santa Fe, the Missouri Pacific and the Missouri-Kansas-Texas. This line is operated as a separate unit, under the direction of joint officers and the oil is delivered in trainload lots to the G. C. & S. F. at Texas City Junction, 11 miles from Texas City. The load limit between Texas City and Bellville, 108 miles, is 5,000 tons and the solid trainloads of oil generally approach this figure closely. At Bellville yard, it is necessary to reduce this tonnage to meet the limit of 3,200 tons from Bellville to Cleburne, 210 miles, and the overflow, usually amounting to some 1,500 tons, is made into a second section and filled out either with tonnage other than oil or with oil that has been shipped from various refineries on the Gulf division in less-than-trainload lots.

The load limit between Cleburne and Purcell, 200 miles, is 2,500 tons, so that the 5,000 ton trains that originally moved from Texas City are split up into two sections of about 2,500 tons each for movement over this section of the line. Between Texas City and Purcell, oil trains have a fixed schedule of 26 hr. 45 min. for the distance of 518 miles. The necessity of reducing tonnage twice with attendant switching takes considerable of this time, but, to make the schedule, both the switching and the road movement must be accomplished with no lost motion. The schedule for the return movement of empties is the same as that for the northbound loads. Frequently, it is possible to consolidate such empties at Purcell or Fort Worth and run them in trainload lots to Texas City. At other times they are handled in smaller lots on fast freight trains hauling other commodities.

The Sulphur Movement

The G. C. & S. F. frequently handles as many as three trainloads of sulphur a day from the large mines at New Gulf, Texas, and the smaller mines at Orchard. Much of this sulphur was formerly handled only to Galveston, for trans-shipment to boats, but the all-rail movement has increased very largely in recent months. The empty cars for the New Gulf movement are sent

from Alvin as an extra train, while those for Orchard are handled on local trains.

Where open-top cars are used, the sulphur is loaded by steam shovels, while a loader-belt is used for loading into box cars. The type of car used depends, in general, upon the unloading facilities available at the consignee's place of business. When sulphur is loaded into open-top cars, a layer of hot liquid sulphur is poured on top of the load. This dries and hardens and effectively prevents the sulphur from blowing away under movement. The carloads, or trainloads as the case may be, are handled into Bellville yard and the operations of the solid trains north are handled in much the same manner as the oil movement.

Rolling Stock In Shape

The change in the character of the traffic brought about by the War was almost revolutionary, yet the G. C. & S. F. was able to meet the test brought about by a whole new set of operating problems, because its track and rolling stock were in such condition as to provide for any eventuality. As soon as the prospective heavy business seemed imminent, the shop forces of the G. C. & S. F. began putting locomotives and cars in order. Since the traffic has increased so rapidly the shop forces at Cleburne, Texas, the main shops of the G. C. & S. F., have been largely increased and put on two shifts instead of one.

The results are evident in the material decreases in cars and locomotives needing repairs. The bad order car figures are included in the system total and are not available for the G. C. & S. F. alone, but the locomotive figures portray the results graphically, as shown in Tables 1 and 2. It will be observed that, whereas in 1940 the average miles per locomotive per day in freight service exceeded 100 in only one of the first eight months, each of the first eight months in 1942 exceeded this figure, rising to a high of 165 miles per day in July. The average for 8 months was 91 miles in 1940, 106 miles in 1941 and 140 miles in 1942. Meanwhile, the percentage of serviceable to total locomotives has remained higher this year on the average than in either of the two previous years.

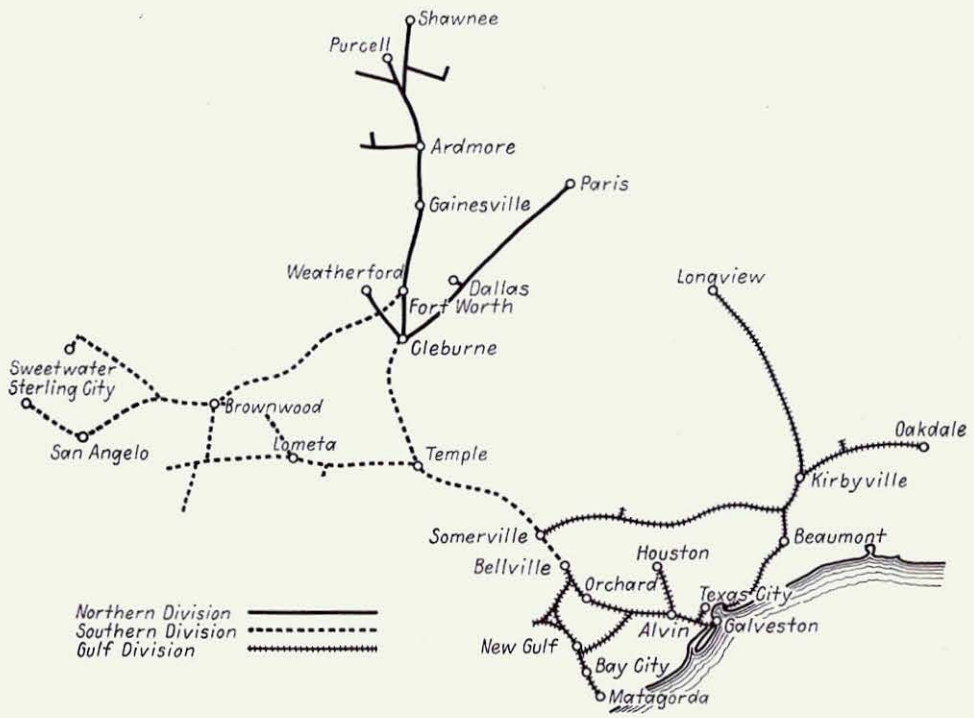
Table No. 1—Percentage of Serviceable to Total Locomotives—Freight Service

	1942	1941	1940
January	89	92	68
February	89	82	75
March	80	76	78
April	86	79	86
May	84	81	85
June	88	87	87
July	91	85	92
August	82	87	80

Table No. 2—Average Miles Per Serviceable Locomotives Per Day—Freight Service

	1942	1941	1940
January	108	111	104
February	126	93	89
March	133	95	89
April	139	99	86
May	143	114	90
June	156	111	87
July	165	113	85
August	143	115	98
Average—8 months	140	106	91

The Gulf, Colorado & Santa Fe Consists of Three Divisions in Texas and Oklahoma



A Good Railroad

A continuing rail program has been carried out in recent years to increase the strength of the track. On the main lines, the following rail situation existed as of October 1, 1942:

Galveston and Purcell

112 lb.	123 miles
110 lb.	246 miles
90 lb.	148 miles

Temple and Sweetwater

90 lb.	247 miles

To maintain the surface of the track economically under heavy traffic, a regular program of surfacing, spotting and joint rehabilitation is carried out, which not

only provides good riding track and extends the life of the rail, but provides a higher classification of reusable rail when it is replaced. This program consists of a certain amount of out-of-face surfacing on each section each year, as determined by the roadmaster, and on the remainder of each section the track is spotted, the joint cars are replaced with reformed joint bars and the joints are tamped up. Following this work, a welding gang builds up the rail ends on all joints to an even surface.

Prior to the surfacing work, a ballast agitator is used to stir the ballast shoulder and provide good drainage at the ends of the ties. To do the surfacing and spotting work, each section gang is increased to 15 men, including an assistant foreman, and is provided with a four-tool compressor and pneumatic tamping tools. The G. C. & S. F. has 10 such compressor units for this work which are transferred from section to section as the program is completed. An assistant foreman is required with the enlarged section gangs to enable the remainder of the gang to continue surfacing or dressing the track if it is necessary for the section foreman to take three or four men and work on other parts of his section. The major portion of these lines have rock ballast, but the same program is also followed for gravel and shell ballast in the maintenance of the 90, 110 and 112 lb. rail, giving preference to the older rail.

A Large General Movement

While oil and sulphur now form the largest movements of single commodities, the G. C. & S. F. is called upon to handle a large amount of other general and special movements. For example, between Cleburne and Bellville, six regular freight trains are operated in each direction daily. Two regular passenger trains are also scheduled over this part of the railroad in each direction daily.

Some of the army camps on the Temple-Sweetwater line receive as many as 125 cars a day requiring many turn-around switch movements. A troop movement requiring 1,029 cars to be made up in special trains and dispatched at two hour intervals recently originated on this section of the G. C. & S. F. and was handled without delays. Troop movements are handled on practically all portions of the railway, including branch-line territory where little or no passenger service has been operated for years.

Man-Power

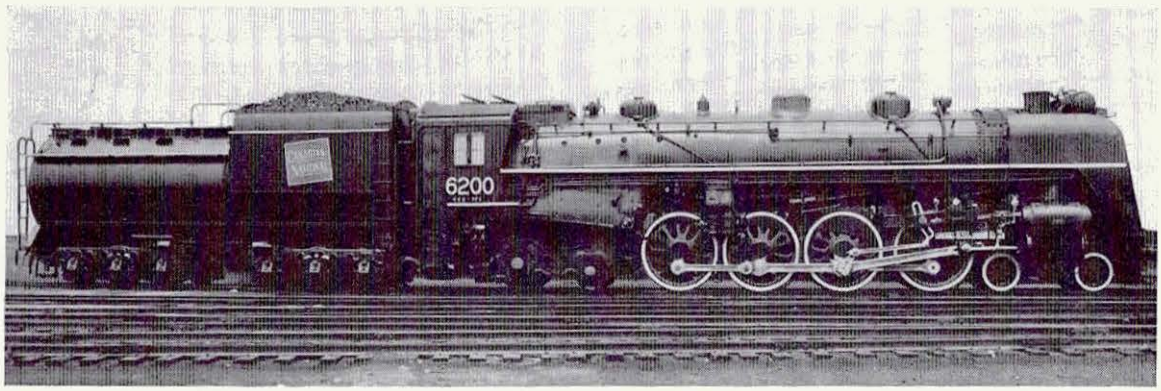
In addition to keeping the rolling stock and track in the best possible condition, the officers of the G. C. & S. F. realized the importance of manpower in handling the increased traffic. From the start of the draft, a consistent and definite policy has been pursued, namely, if any employee, no matter how important, could be replaced by a 3-A man, no deferment was asked. As a result, the problem of retaining enough men to run the railroad has been simplified and local draft boards are convinced that, when the G. C. & S. F. asks for a deferment, the case is worthy of serious consideration.

As soon as the possibility of the numerous special train movements was foreseen, it was realized that, on a single track railway, this was sure to complicate dis-

(*Continued on page 212*)

Oil Traffic Has Increased Tremendously on the G. C. & S. F.

Refinements in 4-8-4 Locomotives For the Canadian National



New locomotives are designed for reduced pressure drop between boiler and cylinders—Controlling lateral resistance improves the riding qualities

THE Canadian National now has in service new 4-8-4 type locomotives which were designed with modifications and improvements developed from the experience of that road with locomotives of the 6100 class which have the same wheel arrangement and some of which have been in service for about 15 years.

The first of the 6100 class were built in 1927, twenty being built by the Montreal Locomotive Works, Ltd., and twenty by the Canadian Locomotive Company, Ltd. The next lot consisted of twenty built by the Montreal Locomotive Works in 1929. All of these locomotives carried a boiler pressure of 250 lb. and, with 25½-in. by 30-in. cylinders, developed a tractive force of 56,800 lb. Five more were purchased from the Montreal Locomotive Works in 1936. Then, in 1940, 25 more were built, 15 by Montreal and 10 by Canadian. All are alike in basic proportions. There has been a gradual increase in total weights, however, from a low of 379,000 lb. to a high of 402,700 lb. for the 1940 order. Heating surfaces have varied relatively little. All have been equipped with the Type E superheater. Including the 35 locomotives delivered by the Montreal Locomotive Works in 1942, the railroad now has 125 in service.

Experiments were conducted on road locomotives which indicated that improved performance could be expected from a streamlining of the steam passages. Therefore, these U-2-g locomotives have enlarged dry pipes and steam pipes, a large element Type E superheater and enlarged streamlined ports in the cylinders. These all combine to effect a reduction in the pressure drop between the boiler and the cylinders and have been proved to result in an increased power output.

Special attention was given to the ashpan in making provisions for larger and unobstructed air openings, and the smokebox deflector plates are arranged to offer the minimum resistance to the flow of gases to the smoke stack. All air and injector pipes on the right side which usually obstruct an ashpan have been carried through a duct in the cab deck under the engineman's seat. This arrangement leaves the pan clear for admission of air and for cleaning purposes. At the smokebox a duct has been provided below the feedwater heater which, in conjunction with the usual side deflector plates is expected to reduce the smoke trailing nuisance when the locomotive is running at full speed.

The Boiler and Appurtenances

The boiler is of the straight-top, taper-bottom type built in three courses. The largest course is 90 in. in outside diameter and the first course is 80⅞ in. in inside diameter. Boiler pressure is 250 lb. per sq. in. and the maximum tractive force, 56,800 lb. The length over the tube sheets is 21 ft. 6 in. There are 33 2¼-in. tubes and 145 4-in. flues, two Nicholson Thermic Syphons and three 3-in. arch tubes. The firebox is 126⅛ in. by 96¼ in., and the combustion chamber 48½ in. long. The grate area is 84.3 sq. ft.

The locomotives have a total heating surface, including tubes, flues, and firebox with arch tubes and syphons, of 4,076 sq. ft. The Type E superheater has a heating surface of 1,835 sq. ft.

The boiler is fed by an Elesco feedwater heater with a C. F. pump at the left side and a non-lifting injector at the right side. Both the air compressor at the right side and the feed pump at the left are carried on brackets attached to the locomotive bed casting. The Barco power reverse gear is also carried on a bracket which is fastened to this casting.

Frame and Running Gear

Each locomotive is built up on a General Steel Castings locomotive bed in which the cylinders, frame, and cradle are cast integral. The cylinders are 25½ in. in diameter and have a 30-in. stroke. The valve gear is of

the Walschaert type. Piston valves are 14 in.; the valve travel, 7¾ in.

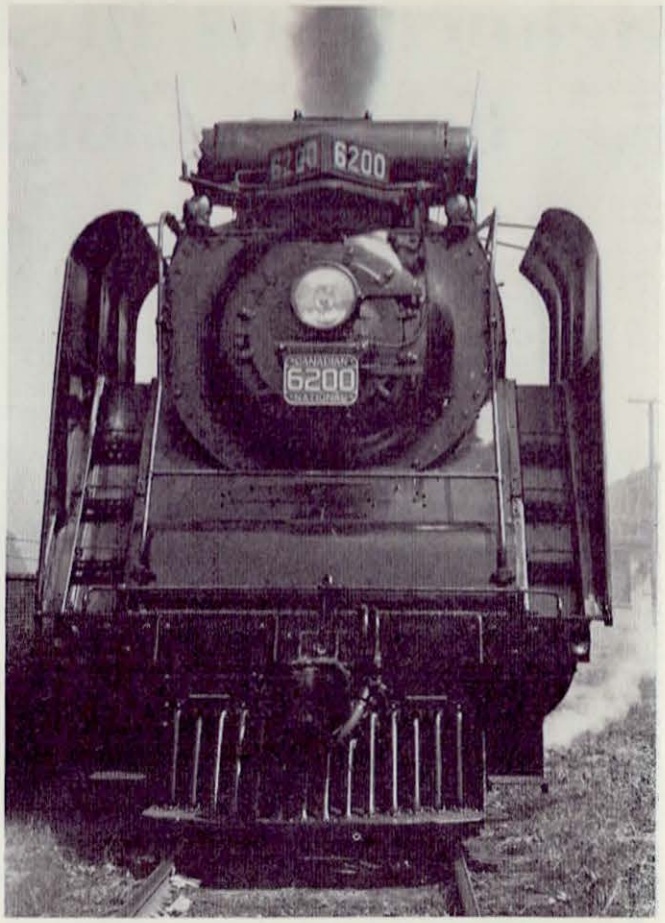
The driving wheels are of the Boxpok type, 73 in. in diameter. The leading truck is a General Steel Castings four-wheel type equipped with Timken inside roller bearings and 34½ in. wheels. The General Steel Castings four-wheel trailing truck has Timken outside roller bearings. On this truck the front wheels have a diameter of 34½ in., the rear wheels are 48 in. The wheel base of locomotive and tender is 82 ft. 4¾ in. Each locomotive has a total weight of 399,600 lb., of which 244,500 lb. is on the drivers; 69,000 lb. on the leading truck; and 86,100 lb. on the trailing truck. The weight of the tender two-thirds loaded is 227,300 lb.

Control of Lateral Resistance

Controlled lateral resistance is provided at the engine truck, first driving wheel, second driving wheel, and the trailing truck of a value proportional to their distance from the rear drivers—very close to the center of gravity of the locomotive—about which the locomotive is assumed to pivot while curving. Each pair of driving-wheel tires is set uniformly 53⅜ in. apart and the first two pairs are fitted with the Alco lateral-motion device. All dead points in the spring rigging are cushioned with coil springs, and provision is made in the spring hangers for universal flexibility. The controlled lateral motion serves to cushion the centrifugal forces so that the locomotive glides easily around curves at least up to 6 deg. at diametral speed. The initial lateral resistances are sufficient to prevent vibration on tangent track. The absence of nosing thus effected makes possible the reduction of the driving-wheel counterbalance to 26 per cent of the reciprocating weights and reduces the dynamic effects at all speeds.

Among the devices used on the locomotives are the American multiple throttle, the A. A. R. front end, Dean type crossheads operating in a three-piece guide bar carried entirely from the locomotive bed, Z-section piston heads with sectional rings, and a Wakefield mechanical lubricator for the steam pipes, cylinders and guides.

The tender is the Vanderbilt type carried on two General Steel Castings six-wheel trucks. The wheels are 34¼ in. in diameter, and the journals are 6 in. by 11 in. of the A. A. R. type. The water capacity of the tender is 11,600 gals. and the coal capacity 18 tons. Coal is fed to the firebox by a Standard HT stoker, the engine of which is in a compartment of the tender at the rear of the coal hopper. Fuel savings of 13 to 14 per cent are expected from these locomotives.



General Dimensions and Weights of the Canadian National 4-8-4 Type Locomotives

Railroad	Canadian National
Builder	Montreal Locomotive Works
Type of locomotive	4-8-4
Road class	U-2-g
Road numbers	6200-6234
Date built	1942
Rated tractive force, engine, lb.	56,800
Weights in working order, lb.:	
On drivers	244,500
On front truck	69,000
On trailing truck	86,100
Total engine	399,600
Tender (two-thirds loaded)	227,300
Wheel bases, ft.-in.:	
Driving	19-6
Engine, total	43-10
Engine and tender, total	82-4¾
Driving wheels, diameter outside tires, in.	73
Cylinders, number, diameter and stroke, in.	25½ x 30
Valve gear, type	Walschaert
Valves, piston type, size, in.	14
Maximum travel, in.	7¾
Boiler:	
Steam pressure, lb.	250
Diameter, first ring, inside, in.	80⅞
Firebox length, in.	126⅛
Firebox, width, in.	96¼
Combustion chamber length, in.	48½
Arch tubes, number and diameter, in.	3-3
Thermic syphons, number	2
Tubes, number and diameter, in.	33-2¼
Flues, number and diameter, in.	145-4
Length over tube sheets, ft.-in.	21-6
Grate area, sq. ft.	84.3
Heating surfaces, sq. ft.:	
Firebox, total (including arch tubes and syphons)	415
Tubes and flues	3,661
Evaporative, total	4,076
Superheater	1,835
Comb. evap. and superheater	5,911
Tender:	
Type	Vanderbilt
Water capacity, gals.	11,600
Fuel capacity, tons	18
Trucks	6-wheel

Good Railroading in Texas

(*Continued from page 210*)

patching problems. Accordingly, a telegraphy school was established several months ago and graduates of this school are now assuring a supply of competent operators. Concurrently, experienced operators were trained as dispatchers. A new set of dispatchers has been located at Temple, Texas, to facilitate the increased train movement.

The foresight of the management in this respect has been duplicated in other departments as far as manpower is concerned. Although a part of a huge railway system, the intensive operations of this relatively compact 2,100-mile portion of the Santa Fe have been possible because of the intimate contact of its officers with its employees. All of the officers are able to visit all important points at frequent intervals and they are personally acquainted with most of the men.

Annual Report of the Bureau of Safety

WASHINGTON, D. C.

WITH its keynote the statement that "safety in transportation is essential to the maximum war effort," the annual report to the Interstate Commerce Commission of S. N. Mills, director of its Bureau of Safety, was made public last week. Statistically, an outstanding feature of the report is its emphasis on the "material increase" in railroad accidents that occurred in the period covered—the fiscal year ending June 30, 1942.

The document sets forth the customary information concerning results of inspection of railroad safety appliances, hours-of-service records of railroad employees, installations of signaling, automatic train-stop and train control devices, and other activities of the bureau. In the director's introductory remarks attention is called to the recent special investigation conducted by the bureau "to test the reliability of the published casualty rates for the various railroads," the report of which was reviewed in *Railway Age* of October 24, 1942, page 651.

Calls For Improved Personnel Training

In discussing factors which have contributed to the increase in the number of accidents reported, the director remarks that "war traffic has introduced conditions which require greatly increased effort and additional facilities to prevent accidents. The number of railroad employees has grown rapidly and is increasing month by month. Consequently, the methods and personnel provided by the railroads for instructing, training and supervising inexperienced employees must likewise be improved and expanded."

Safety of operation has been "seriously impaired" in many localities, the report points out, by the intensive use made of railroad facilities where extensive war industries have been developed, and more generally by the increase in the number and the length of the trains operated. "Restrictions upon the use of materials required for railroad facilities and equipment have resulted in serious delays in revising existing installations, making necessary new installations, and securing needed replacements and additions. Intensive use of locomotives and cars required to handle present traffic and curtailment of construction of new locomotives and cars require extraordinary efforts by inspection and repair forces of the railroads and have placed increased responsibility upon supervisory forces of the railroads and upon our inspectors to maintain necessary standards and precautions for safety of operation."

Referring to the relationship of safety of train operation to the war effort, Mr. Mills remarks, "the loss of man-hours which results from railway accidents, as well as the destruction of or damage to cars and contents, locomotives, and other equipment, restricts our effectiveness in war. The permanent or temporary loss of the services of trained railroad employees, the interruption of transportation service, and the loss of the use of equipment are especially serious when railroad facilities are strained to meet the abnormal demands of wartime traffic. Such accidents also involve casualties to some of the troops which are being transported. The effect of these losses as compared with the sinking of ships at sea differs only in respect to the number of men and volume of essential equipment or materials sacrificed. Under these emergency conditions, the prevention of accidents assumes an importance that is in addition to the economic and humanitarian considerations to be given to accidents under peacetime conditions."

Railroads are reporting more than 1,000 train accidents each month, the report points out, and compared with the situation a year previously, reportable accidents have increased more rapidly than locomotive-miles. In the first five months of 1942 the number of accidents reported, 5,147, amounted to an increase of 53.73 per cent, as compared with an increase in car-miles of 22.67 per cent and an increase of 15.92 per cent in locomotive-miles.

During the fiscal year surveyed in the report a total of 1,221,039 cars and locomotives was inspected, the largest number since 1936. Of these 31,477, or 2.58 per cent, were found defective, as compared with 2.91 per cent, or 28,110, found defective out of the 1,119,690 inspected in the previous 12-month period. The number of passenger cars inspected, 29,568, was the largest over a five year period, while the percentage of such cars found defective, 2.63 per cent, was the smallest in the same period.

Air-brake tests were made on 133,728 cars in 2,965 trains prepared for departure from terminals during the period covered by the report. The brake apparatus was operative on 133,621 cars, or 99.92 per cent of the total. To attain this result, however, 1,093 cars with defective or inoperative brakes were set out and repairs were made on 1,124 cars remaining in the trains. In 1,111 trains arriving at terminals the bureau's inspectors tested 58,802 cars and found air brakes operative on 57,855 cars, or 98.39 per cent of the total.

Streamliner Appliances Corrected

Calling attention to the mention made in the two preceding annual reports of "the discrepancy existing between the safety-appliance equipment installed on certain streamlined passenger-train cars constructed in recent years and specifications for safety appliances" established by the commission in 1911, Mr. Mills remarks of this situation that "correction has been completed." Further progress has been made, he adds, in correcting other conditions to which attention had been directed, including the use of certain devices to make lock blocks of tightlock couplers inoperative, improper running boards on steam locomotives, and incorrect handholds on Diesel-electric locomotives.

Another task performed by the bureau's inspectors during the year under review was an investigation of the physical condition of the Toledo, Peoria & Western and of operating conditions and practices in effect on that line, which was undertaken at the request of the federal manager of that road.

The number of interchange freight cars equipped with AB brakes during the year was 194,196, of which 95,173 were new cars. The total number of railroad-owned cars so equipped on June 30, 1942, was 665,103, or 36.5 per cent of such cars. Private car owners on the same date had equipped 18.03 per cent of their cars, or 50,234. Of all interchange freight cars there were 34.05 per cent equipped with AB brakes, the report points out, at the expiration of 75 per cent of the 10-year period allowed for completing this installation. "Only a few Class I carriers have kept pace with the schedule necessary to accomplish this improvement within the 10-year period."

Mr. Mills adds, "Under the stress of present wartime traffic conditions, it is particularly important

ODT Salary List Is Sent to Senate

Appropriations committee gets data on those receiving over $3,000 a year

Responding to Senate Resolution 322 of the previous Congress, Director Eastman of the Office of Defense Transportation last week sent to the Senate committee on appropriations a list of ODT employees who draw salaries of $3,000 a year or more, together with their age, education, and business or professional affiliations during the five-year period preceding their employment by ODT. The list showed that 177 received over $5,000 a year, including 38 receiving $8,000, 52 in the $6,500 classification, one employed at $6,400, 84 at $5,600, and two at $5,400.

While there have been some changes in the organization since the compilation was made, such as the resignations of J. R. Turney and J. W. Barriger, the list as submitted showed salaries of over $6,000 a year as follows:

WASHINGTON HEADQUARTERS

$8,000 a Year

Ray G. Atherton, associate director.
John W. Barriger, associate director.
Victor V. Boatner, director, Division of Railway Transport.
Walter Bockstahler, assistant director.
Edmund M. Brady, chief, City Delivery Section.
Carroll W. Brown, chief, Materials & Equipment.
Olin C. Castle, assistant director.
Charles B. Colpitts, associate director.
William J. Cumming, chief, Vehicle Maintenance Section.
Samuel W. Fordyce, III, assistant director.
Robert A. Hicks, chief, Farm Vehicle Section.
Ernst Holzborn, assistant director in charge of waterways.
Charles F. Kellers, director, Coastwise & Intercoastal Division.
Harry H. Kelly, chief, all[illegible]ions section.
Ellis [illegible] Longnecker, [illegible], property carrier operation
Arth[illegible] R. Mahaney, as[illegible]tant director.
He[illegible] F. McCarthy, director, Division of Traffic [illegible]ovement.
John W. Montigney, assistant director.
Thomas H. Nichol, associate director.
Samuel F. Niness, chief, Retail Carriers Section.
Guy A. Richardson, director, Division of Local Transport.
Edward A. Roberts, associate director, Local Transport.
J. Raymond Shoemaker, associate director.
Samuel G. Spear, associate director.
H. Richard Stickel, associate director.
Glenn E. Taylor, chief waterways transportation officer.
John R. Turney, director, Division of Transport Conservation.
Joseph L. White, executive assistant.

$6,500 a Year

Walter L. Baumgartner, chief enforcement attorney.
Arthur E. Baylis, chief business specialist.
Arthur V. Bourque, chief, Tank Car Section.
Edward C. Cavey, head transportation officer.
Charles L. Dearing, chief business specialist.
Harold J. Drescher, chief business specialist.
Edwin M. Fitch, assistant to director.
James E. Friend, head rail transportation engineer.
Joseph Hattendorf, deputy director.
Edward R. Hauer, head rail transportation engineer.
Harold A. Hobson, head transportation officer.
Hallan Huffman, assistant general counsel.
Ralph H. Jewell, head, Rail Abandonment Section.
Mathew E. Kane, assistant chief allocations specialist.
Harry H. Kiernan, head transportation officer.
Robert C. King, head transportation analyst.
Alvin S. McEvoy, head transportation officer.
Bryant Putney, head information specialist.
Walter S. Rainville, assistant director.
James O. Riley, head transportation advisor.
Francis A. Silver, assistant general counsel.
Percy N. Simmons, assistant director.
Simon C. Skeels, head administrative officer.
James R. Sloan, chief, Raw Materials Section.
C. Austin Sutherland, assistant chief, Petroleum Carriers Section.
Clewell Sykes, chief, Taxicab Section.
Lawrence C. Turner, chief, Research & Permits Section.
Bernard A. Wahle, assistant chief, Intercity Bus Section.
Horace M. Wigney, head rail transportation officer.
Norton P. Willis, head transportation officer.
James J. Williams, head transportation officer.
Fred L. Yeater, chief, Traffic Flow Unit.

U. S. REGIONAL OFFICES

$8,000 a Year

William G. Curren, deputy director, Division of Railway Transport.
Charles M. Moore, chief rail-marine officer.
Alexander T. Wood, director, Division of Lake Carriers.
Harry G. Brandt, associate director.
Fred Keiser, chief transportation officer.
James M. Baths, deputy director, Division of Railway Transport.

$6,500 a Year

William J. Clark, regional manager, Division of Motor Transport.
Alfred R. Pelnar, head rail transportation officer.
Charles F. Caley, head transportation officer.
Melvin R. Greene, regional manager.
John G. Caley, regional manager.
Guy Kelcey, administrative assistant director.
William H. Russell, deputy associate director.
Robert D. Thomas, regional manager, Division of Motor Transport.
Harry L. Gormley, regional manager.
Henry B. Potter, assistant director.
Raymond B. Croll, head rail transportation officer.
Harry R. Fertig, head rail transportation officer.
Rolla C. Coleman, regional manager.
Clyde W. Pace, head rail transportation officer.
William T. Long, Jr., deputy associate director.
John C. Massenburg, regional manager.
Edward P. McCallum, Jr., assistant director.
Asa J. Merrill, regional manager.
Harold C. Arnot, regional manager.
Robert O. Crowe, assistant director.

$6,400 a Year

Neil S. Laidlaw, principal transportation officer.

PUERTO RICO REGIONAL OFFICE

$8,000 a Year

Charles G. Anthony, regional director.
Joseph R. Herrin, assistant regional director—trucks.
Paul H. Quinn, assistant regional director—railroads.
Park M. Smith, assistant regional director—passenger transportation.

Army School Graduates Officers for Transportation Corps

Additional officers for the Army Transportation Corps were provided January 6, when the Officer Candidate School at Mississippi State College, State College, Miss., graduated approximately 250 members of its first class.

While the school has been operated by the Adjutant General's Department, its entire graduating class has been assigned to the Transportation Corps, the War Department announcement pointed out. On January 14, the school was transferred to the Transportation Corps.

Initially, the Transportation Corps, headed by Major General Charles P. Gross, was manned by officers and enlisted personnel skilled in transport matters recruited from other arms and branches of the Army. With the formation of the Corps, these officers and men were divorced from their previous branches of the Service, and assigned to the Transportation Corps. "Because of the rapid growth and necessarily vast expansion of the new Corps," the War Department said, "a need for new and skilled officers has developed. Transfer of the Mississippi school will provide a steady flow of trained officers to the Transportation Corps."

Rules for Getting Operating Supplies

Must report CMP materials for the second term by February 1st

"Controlled Materials Plan" materials which railroads will require for maintenance and repair during the second quarter of 1943, may be reported to the War Production Board on the same forms which are used in obtaining materials under the P-88 order, but CMP materials must be shown separately from the other materials and reports must be filed with WPB by February 1, according to instructions issued to the railroads by the Transportation Equipment Division. The instructions, which prescribe numerous revisions in the previous use of Form 351, in order to adapt existing methods of reporting materials to the Controlled Materials Plan recently announced by WPB, until such time as new forms are printed, are as follows:

TO HOLDERS OF ORDER P-88:

Instructions for filing requests for second quarter material for maintenance and repair.

General.—The Transportation Equipment Division is engaged in the problem of integrating the needs of the transportation industrry for maintenance and repair materials with the procedure under the Controlled Materials Plan. In order to be in position to bring these requirements under the Plan it will be necessary to have requests for allotment of Controlled Materials and requests for authorization for other C. M. P. Materials and fabricated parts submitted not later than February 1, 1943, covering second quarter 1943 requirements. These requests should be submitted on Form PD-351 as indicated below.

1. Controlled Materials.—"Controlled Materials" as defined in "Controlled Materials Plan, General Instructions, November 14, 1942," are carbon steel, alloy steel, copper and copper base alloys and aluminum. These materials should be listed in Column (1) of Form PD-351 in the order and with the code numbers as shown in the instruction booklet noted above. Under Column (3), "Unit of Measure" show net tons for carbon steel and pounds for all other materials except wood. Columns (4) and (5) may be left blank. Under Column (6) show amount used third quarter of 1942 and under Column (7) show inventory September 30, 1942. These two columns will repeat information presented on Form PD-351 request for first quarter 1943 requirements but with items consolidated in accordance with the above noted code numbers. Under Column (8) show the amount of anticipated *use* of material in second quarter 1943 and under Column (9) show desired receipts from mills, foundries, or other sources of supply during the second quarter 1943. Unless statement is attached to the Form PD-351 indicating otherwise it will be assumed that deliveries from the mills can be made in equal installments in each month of the quarter.

The following special instructions should be noted in connection with items under "Controlled Materials":

(a) Show one item to cover firebox and boiler plate and a second item to cover all other plate.

(b) Show the following as separate items at the bottom of list under "Controlled Materials":
  (i) Axles, new, loose, item 2056-A
  (ii) Wheels, rolled steel, new loose, item 2056-B
  (iii) Locomotive tires, new loose, item 2056-C
  (iv) Bolsters, cast steel
  (v) Couplers and yokes, cast steel
  (vi) Side frames, cast steel
  (vii) Brake shoes
  (viii) Wheels, cast iron, new loose

Annual Report of the Bureau of Safety

WASHINGTON, D. C.

WITH its keynote the statement that "safety in transportation is essential to the maximum war effort," the annual report to the Interstate Commerce Commission of S. N. Mills, director of its Bureau of Safety, was made public last week. Statistically, an outstanding feature of the report is its emphasis on the "material increase" in railroad accidents that occurred in the period covered—the fiscal year ending June 30, 1942.

The document sets forth the customary information concerning results of inspection of railroad safety appliances, hours-of-service records of railroad employees, installations of signaling, automatic train-stop and train control devices, and other activities of the bureau. In the director's introductory remarks attention is called to the recent special investigation conducted by the bureau "to test the reliability of the published casualty rates for the various railroads," the report of which was reviewed in *Railway Age* of October 24, 1942, page 651.

Calls For Improved Personnel Training

In discussing factors which have contributed to the increase in the number of accidents reported, the director remarks that "war traffic has introduced conditions which require greatly increased effort and additional facilities to prevent accidents. The number of railroad employees has grown rapidly and is increasing month by month. Consequently, the methods and personnel provided by the railroads for instructing, training and supervising inexperienced employees must likewise be improved and expanded."

Safety of operation has been "seriously impaired" in many localities, the report points out, by the intensive use made of railroad facilities where extensive war industries have been developed, and more generally by the increase in the number and the length of the trains operated. "Restrictions upon the use of materials required for railroad facilities and equipment have resulted in serious delays in revising existing installations, making necessary new installations, and securing needed replacements and additions. Intensive use of locomotives and cars required to handle present traffic and curtailment of construction of new locomotives and cars require extraordinary efforts by inspection and repair forces of the railroads and have placed increased responsibility upon supervisory forces of the railroads and upon our inspectors to maintain necessary standards and precautions for safety of operation."

Referring to the relationship of safety of train operation to the war effort, Mr. Mills remarks, "the loss of man-hours which results from railway accidents, as well as the destruction of or damage to cars and contents, locomotives, and other equipment, restricts our effectiveness in war. The permanent or temporary loss of the services of trained railroad employees, the interruption of transportation service, and the loss of the use of equipment are especially serious when railroad facilities are strained to meet the abnormal demands of wartime traffic. Such accidents also involve casualties to some of the troops which are being transported. The effect of these losses as compared with the sinking of ships at sea differs only in respect to the number of men and volume of essential equipment or materials sacrificed. Under these emergency conditions, the prevention of accidents assumes an importance that is in addition to the economic and humanitarian considerations to be given to accidents under peacetime conditions."

Railroads are reporting more than 1,000 train accidents each month, the report points out, and compared with the situation a year previously, reportable accidents have increased more rapidly than locomotive-miles. In the first five months of 1942 the number of accidents reported, 5,147, amounted to an increase of 53.73 per cent, as compared with an increase in car-miles of 22.67 per cent and an increase of 15.92 per cent in locomotive-miles.

During the fiscal year surveyed in the report a total of 1,221,039 cars and locomotives was inspected, the largest number since 1936. Of these 31,477, or 2.58 per cent, were found defective, as compared with 2.91 per cent, or 28,110, found defective out of the 1,119,690 inspected in the previous 12-month period. The number of passenger cars inspected, 29,568, was the largest over a five year period, while the percentage of such cars found defective, 2.63 per cent, was the smallest in the same period.

Air-brake tests were made on 133,728 cars in 2,965 trains prepared for departure from terminals during the period covered by the report. The brake apparatus was operative on 133,621 cars, or 99.92 per cent of the total. To attain this result, however, 1,093 cars with defective or inoperative brakes were set out and repairs were made on 1,124 cars remaining in the trains. In 1,111 trains arriving at terminals the bureau's inspectors tested 58,802 cars and found air brakes operative on 57,855 cars, or 98.39 per cent of the total.

Streamliner Appliances Corrected

Calling attention to the mention made in the two preceding annual reports of "the discrepancy existing between the safety-appliance equipment installed on certain streamlined passenger-train cars constructed in recent years and specifications for safety appliances" established by the commission in 1911, Mr. Mills remarks of this situation that "correction has been completed." Further progress has been made, he adds, in correcting other conditions to which attention had been directed, including the use of certain devices to make lock blocks of tightlock couplers inoperative, improper running boards on steam locomotives, and incorrect handholds on Diesel-electric locomotives.

Another task performed by the bureau's inspectors during the year under review was an investigation of the physical condition of the Toledo, Peoria & Western and of operating conditions and practices in effect on that line, which was undertaken at the request of the federal manager of that road.

The number of interchange freight cars equipped with AB brakes during the year was 194,196, of which 95,173 were new cars. The total number of railroad-owned cars so equipped on June 30, 1942, was 665,103, or 36.5 per cent of such cars. Private car owners on the same date had equipped 18.03 per cent of their cars, or 50,234. Of all interchange freight cars there were 34.05 per cent equipped with AB brakes, the report points out, at the expiration of 75 per cent of the 10-year period allowed for completing this installation. "Only a few Class I carriers have kept pace with the schedule necessary to accomplish this improvement within the 10-year period."

Mr. Mills adds, "Under the stress of present wartime traffic conditions, it is particularly important

that the advantages of this improved equipment be made fully available as rapidly as possible."

More Excess Hours of Service

During the fiscal year hours-of-service reports were filed with the bureau by 745 railroads, and of these 195 reported a total of 14,280 cases of excess service of all classes, an increase of 6,871 instances as compared with the preceding year. The causes of instances in which train-service employees remained on duty more than 16 consecutive hours were, as usual, divided among a varied list, but the most important were wartime measures and conditions—a new classification which accounted for 1,143 instances out of the total—adverse weather conditions (including landslides, high water and fire as well), and collisions and derailments. Altogether 4,670 such cases were reported, as compared with 1,456 the year before.

As of January 1, 1942, there were 66,423 miles of road (97,361 miles of track) equipped with automatic block signals. At the same date 10,629 miles of road, embracing 20,578 miles of track, were equipped with automatic train-stop, train control and cab signal devices, the report indicates. During the 12 months under review 1,279 applications were filed with the commission under the signal inspection provisions of the Act of 1937, 1,336 applications were acted upon, 45 were withdrawn, and 127 remained pending at the end of the period. During the year the commission issued "show cause" orders directed to seven roads requiring certain installations of signaling equipment.

Alleged violations of safety appliance laws in 96 cases, involving 222 counts, were turned over to United States attorneys for action during the year, as were 35 cases, involving 98 counts, claiming violations of the hours-of-service law. At the end of period covered by the report 63 safety-appliance cases and 28 hours-of-service cases were pending in the courts.

Accident statistics included in the report indicate that in the fiscal year the commission received reports on 3,682 collisions and 5,837 derailments, or 9,519 such accidents as compared with 6,471 in the year before. The number of persons killed was 221, as compared with 183 in the preceding 12 months, while 1,973 were injured, as compared with 1,477.

Continued progress was reported in the elimination of highway grade crossings, the net decrease during the calendar year 1941 being 939, leaving the total number of such crossings on that date 229,722.

Victorian Railways' Suggestions Scheme

THE state controlled railways of Victoria, Australia, have long realized the value of inviting a co-operative interest in the enterprise by encouraging suggestions from the staff. Over 20 years ago the administration established a betterment and suggestions board, comprising a chairman and two members, to handle suggestions submitted by Victorian railwaymen. Up to date over 43,000 suggestions have been considered and over 7,000, or approximately one-sixth, have been adopted, the awards for the ideas ranging up to £400 and including a number over £100.

The Victorian railway suggestion scheme has the paramount virtue of enlisting the confidence of the employee. The big governing factor in its creation was the protection of the inventor of new methods and improvements against the possibilities of victimization, bad feeling or embarrassment, and to this end the betterment and suggestions board has ever been able to guarantee the utmost secrecy to every father of an idea.

It should be emphasized at the outset that the betterment and suggestions board is entirely independent of the service, though it is composed of veteran service men, each one an expert in some particular branch of railway working. Broadly the engineering and mechanical suggestions are considered by one member; another member deals with transportation and general subjects, and both are under the control of a chairman of long railway experience.

All ideas are submitted under cover direct to the board and not in the usual departmental method via the head of the department. Furthermore, to ensure the strictest confidence as between the employee and the board, the original letter detailing the suggestion does not leave the board; only a typed copy of the idea bearing a number instead of a name is sent out when reports are necessary. Also all communications between the board and the suggestor are forwarded, if he wishes, to his private address. This method ensures his supervising officer or his workmates remaining ignorant of the fact that he has submitted a "brain wave" to the department.

When an idea is held to be worthy of approval the board makes a recommendation to that effect to the commissioners, who control the Victorian Railways. If the commissioners agree, the suggestion is adopted and recognition is then granted to the successful suggestor.

The usual practice in making awards is to base them on the estimated savings which will result from the adoption of the idea. For example, an economic plan for cleaning condenser tubes at an electric power house under the control of the Victorian Railways earned the suggestor £420. In another instance an improved clip for overhead gear brought a reward of £313. In some cases where it is practicable to adopt a suggestion in part but not in toto, a reduced award may be made.

On the adoption of an idea the suggestor's name, but not the subject of his suggestion, is forwarded to the branch in which he is employed so that a suitable entry may be made on his history sheet. If he prefers that his activities as an inventor or suggestor remain unknown, his name is not disclosed and his award is paid to him at his private address.

The Railways commissioners have the right to use all suggestions made officially by Victorian railway employees, but if a railwayman has an invention which he desires to patent he will be assisted, under certain conditions, to do so. Another important aspect of this suggestions arrangement is that if an employee introduces an appliance or method for use in the railways without first bringing it under the notice of the Suggestions Board, his claim for reward will be considered if he makes his application within twelve months of the date of introduction of his idea.

The suggestions, which continue to flow in steadily, demonstrate the interest which the employees take in their jobs. Many ideas have revealed great inventive ingenuity; others have been responsible for alterations in departmental and workshop routine; others still have initiated new methods in transportation, whilst in the aggregate they have produced economies in time and money which have been of immense value to the Victorian Railways.

Railroads-in-War News

Oil Moves Faster To Eastern Points

Army throws in 200,000 drums to augment tank car and pipeline deliveries

No promise of early relief from the critical shortage of fuel oil and gasoline in the East Coast area was seen by Petroleum Administrator Ickes in the substantial upturn in all-rail deliveries of petroleum products to that region reported January 9. In the week ending January 2, which was covered by that report, the daily tank car movement averaged 775,409 barrels, an increase of 74,582 barrels a day over the previous week.

The increase reported was accounted for by the administrator's office by the fact that "several hundred" tank cars which had been delayed in arrival at supply sources in the southwestern oil fields and at the midwestern pipeline terminals became available for loading. The delays involved resulted from high water and flood conditions in the Ohio and Mississippi valleys, it was said.

In spite of actions so far taken to increase daily oil deliveries in the Atlantic coast district withdrawals from storage continue to run ahead of receipts, the announcement pointed out, and current stocks are said to have been reduced close to minimum safe working levels. In an emergency move to relieve the situation, shipment of kerosene in steel drums in box cars will continue, Mr. Ickes stated. An initial shipment amounted to approximately 3,200 barrels and it was decided to increase the quantity of kerosene handled in this way when the Army made available for the purpose 200,000 steel drums. Plans have been worked out to move 6,500 barrels of kerosene daily by this method.

Administrator Ickes estimated that costs of shipment in drums might amount to 15 cents per gallon, but arrangements were made, effective January 12, for the Defense Supplies Corporation to absorb the additional transportation costs under the terms of its Regulation No. 1 as amended, provided suppliers secure prior authority for each movement from the PAW office.

Pipeline gateways are supplying more than 160,000 barrels of oil daily to the East Coast area, Mr. Ickes stated, and this quantity is being increased steadily as pumping capacity is increased. For example, he said, the line from El Dorado, Ark., to Helena, which now handles about 25,000 barrels a day for transport up the Mississippi by barge and subsequent movement east by tank car, will be able to handle 55,000 barrels a day when additional pump stations go into service. No substantial increase in pipeline deliveries is expected, however, until extensions of the Plantation pipeline into Virginia and a new line from the Ohio River to Philadelphia are placed in operation.

A statement from the War Production Board on January 7 indicated that most, if not all, of 500 additional semi-trailer tanks for truck operation authorized on that date will be in service by February 15. A previous authorization of 300 such tank semi-trailers, made in December, will be completed and in service, it is estimated, by January 31. These vehicles are units of approximately 4,000 gallons capacity, and are expected to relieve a large number of tank cars now engaged in short haul oil movement.

A special Senate committee, of which Senator Clark, Democrat, of Missouri, is chairman, last week continued inquiries into transportation facilities available in the midwestern region for fuels of all types. One witness before this committee was W. C. Kendall, chairman of the car service division of the Association of American Railroads, who expressed confidence that the available facilities in that area would be adequate to meet its needs. He was not inclined to hope for a substantial increase in tank car deliveries to the East, however, while severe weather prevails.

A War Production Board announcement January 13 indicated that discussions between WPB Chairman Nelson and Mr. Ickes had resulted in a clarification of the latter's authority in controlling activities of the petroleum industry, including "production, refining, treating, storage, shipment, receipt and distribution within the industry," and it was said that as soon as possible all WPB orders which come within the provisions of this understanding would be superseded by PAW orders to the same effect. The so-called M-68 series of WPB orders, which concern production and marketing, and L-70, regulating motor fuel shipments, will be included in this realignment.

Tire Inspections Postponed

The final date for initial commercial motor vehicle tire inspections, required under General Order ODT No. 21, has been postponed to February 28, the Office of Defense Transportation announced January 12. The date originally set was January 15. After the first inspection each vehicle must be inspected again every 60 days or every 5,000 miles of operation, whichever occurs first. Endorsements indicating that the regulation has been complied with, to be applied to the ODT certificates of war necessity, will be necessary, Director Eastman pointed out, in order to secure gasoline ration coupons.

Cross-Haul Critics Long on Theory

Eastman says ending practice sounds simple, until you try to do it

While the end sought is the saving of transportation, the elimination of cross-hauling is not a transportation problem, but one that requires "a knowledge of the industry which produces and markets" the commodity involved, Director Eastman of the Office of Defense Transportation told a meeting of the National League of Wholesale Fresh Fruit and Vegetable Distributors at Cincinnati, Ohio, on January 13. Mr. Eastman is "ready and willing" to implement by transportation orders any plans for the elimination of cross-hauling, but he thinks the plans themselves should "emanate from the agencies of government which are directly concerned with the producing industries and have intimate knowledge of those industries."

Thus he assured his listeners that he has "no intention of restricting the transportation of fruits and vegetables or, if it should become necessary, of making effective any order of priorities with respect to their movement, without advice from the Food Administrator." For what it may be worth, the ODT director expressed his view that it is "quite likely that there could be a substantial saving in the transportation of fruits and vegetables, through some limitation of their distribution, without harm in other ways which would more than offset the transportation gain."

Meanwhile, he doubts whether the saving would be "as great as some have supposed"; because, "frankly," he does not regard "these opinions as valuable, and manifestly the subject ought to be thoroughly explored." Previously, Mr. Eastman had said that the elimination of cross-hauling "may seem a simple matter" to those "who can stop with the idea and have no responsibility for its practical application;" but "actually, it is most complex."

Making his usual comment on transportation priorities, the ODT director recalled how those of World War I were "demoralizing in their effects on all concerned," adding that they should this time be regarded "as a last resort, when all else fails." In other parts of his address Mr. Eastman undertook to give his audience a "general understanding" of the wartime transportation situation, stressing the good job the carriers and shippers are doing and explaining the necessity for ODT's minimum loading orders in the railroad field and conservation orders in the field of motor transport.

ODT Salary List Is Sent to Senate

Appropriations committee gets data on those receiving over $3,000 a year

Responding to Senate Resolution 322 of the previous Congress, Director Eastman of the Office of Defense Transportation last week sent to the Senate committee on appropriations a list of ODT employees who draw salaries of $3,000 a year or more, together with their age, education, and business or professional affiliations during the five-year period preceding their employment by ODT. The list showed that 177 received over $5,000 a year, including 38 receiving $8,000, 52 in the $6,500 classification, one employed at $6,400, 84 at $5,600, and two at $5,400.

While there have been some changes in the organization since the compilation was made, such as the resignations of J. R. Turney and J. W. Barriger, the list as submitted showed salaries of over $6,000 a year as follows:

WASHINGTON HEADQUARTERS

$8,000 a Year

Ray G. Atherton, associate director.
John W. Barriger, associate director.
Victor V. Boatner, director, Division of Railway Transport.
Walter Bockstahler, assistant director.
Edmund M. Brady, chief, City Delivery Section.
Carroll W. Brown, chief, Materials & Equipment.
Olin C. Castle, assistant director.
Charles B. Colpitts, associate director.
William J. Cumming, chief, Vehicle Maintenance Section.
Samuel W. Fordyce, III, assistant director.
Robert A. Hicks, chief, Farm Vehicle Section.
Ernst Holzborn, assistant director in charge of waterways.
Charles F. Kellers, director, Coastwise & Intercoastal Division.
Harry H. Kelly, chief, allocations section.
Ellis T. Longnecker, chief, property carrier operations.
Arthur R. Mahaney, assistant director.
Henry F. McCarthy, director, Division of Traffic Movement.
John W. Montigney, assistant director.
Thomas H. Nichol, associate director.
Samuel F. Niness, chief, Retail Carriers Section.
Guy A. Richardson, director, Division of Local Transport.
Edward A. Roberts, associate director, Local Transport.
J. Raymond Shoemaker, associate director.
Samuel G. Spear, associate director.
H. Richard Stickel, associate director.
Glenn E. Taylor, chief waterways transportation officer.
John R. Turney, director, Division of Transport Conservation.
Joseph L. White, executive assistant.

$6,500 a Year

Walter L. Baumgartner, chief enforcement attorney.
Arthur E. Baylis, chief business specialist.
Arthur V. Bourque, chief, Tank Car Section.
Edward C. Cavey, head transportation officer.
Charles L. Dearing, chief business specialist.
Harold J. Drescher, chief business specialist.
Edwin M. Fitch, assistant to director.
James E. Friend, head rail transportation engineer.
Joseph Hattendorf, deputy director.
Edward R. Hauer, head rail transportation engineer.
Harold A. Hobson, head transportation officer.
Hallan Huffman, assistant general counsel.
Ralph H. Jewell, head, Rail Abandonment Section.
Mathew E. Kane, assistant chief allocations specialist.
Harry H. Kiernan, head transportation officer.
Robert C. King, head transportation analyst.
Alvin S. McEvoy, head transportation officer.
Bryant Putney, head information specialist.
Walter S. Rainville, assistant director.
James O. Riley, head transportation advisor.
Francis A. Silver, assistant general counsel.
Percy N. Simmons, assistant director.
Simon C. Skeels, head administrative officer.
James R. Sloan, chief, Raw Materials Section.
C. Austin Sutherland, assistant chief, Petroleum Carriers Section.
Clewell Sykes, chief, Taxicab Section.
Lawrence C. Turner, chief, Research & Permits Section.
Bernard A. Wahle, assistant chief, Intercity Bus Section.
Horace M. Wigney, head rail transportation officer.
Norton P. Willis, head transportation officer.
James J. Williams, head transportation officer.
Fred L. Yeater, chief, Traffic Flow Unit.

U. S. REGIONAL OFFICES

$8,000 a Year

William G. Curren, deputy director, Division of Railway Transport.
Charles M. Moore, chief rail-marine officer.
Alexander T. Wood, director, Division of Lake Carriers.
Harry G. Brandt, associate director.
Fred Keiser, chief transportation officer.
James M. Baths, deputy director, Division of Railway Transport.

$6,500 a Year

William J. Clark, regional manager, Division of Motor Transport.
Alfred R. Pelnar, head rail transportation officer.
Charles F. Caley, head transportation officer.
Melvin R. Greene, regional manager.
John G. Caley, regional manager.
Guy Kelcey, administrative assistant director.
William H. Russell, deputy associate director.
Robert D. Thomas, regional manager, Division of Motor Transport.
Harry L. Gormley, regional manager.
Henry B. Potter, assistant director.
Raymond B. Croll, head rail transportation officer.
Harry R. Fertig, head rail transportation officer.
Rolla C. Coleman, regional manager.
Clyde W. Pace, head rail transportation officer.
William T. Long, Jr., deputy associate director.
John C. Massenburg, regional manager.
Edward P. McCallum, Jr., assistant director.
Asa J. Merrill, regional manager.
Harold C. Arnot, regional manager.
Robert O. Crowe, assistant director.

$6,400 a Year

Neil S. Laidlaw, principal transportation officer.

PUERTO RICO REGIONAL OFFICE

$8,000 a Year

Charles G. Anthony, regional director.
Joseph R. Herrin, assistant regional director—trucks.
Paul H. Quinn, assistant regional director—railroads.
Park M. Smith, assistant regional director—passenger transportation.

Army School Graduates Officers for Transportation Corps

Additional officers for the Army Transportation Corps were provided January 6, when the Officer Candidate School at Mississippi State College, State College, Miss., graduated approximately 250 members of its first class.

While the school has been operated by the Adjutant General's Department, its entire graduating class has been assigned to the Transportation Corps, the War Department announcement pointed out. On January 14, the school was transferred to the Transportation Corps.

Initially, the Transportation Corps, headed by Major General Charles P. Gross, was manned by officers and enlisted personnel skilled in transport matters recruited from other arms and branches of the Army. With the formation of the Corps, these officers and men were divorced from their previous branches of the Service, and assigned to the Transportation Corps. "Because of the rapid growth and necessarily vast expansion of the new Corps," the War Department said, "a need for new and skilled officers has developed. Transfer of the Mississippi school will provide a steady flow of trained officers to the Transportation Corps."

Rules for Getting Operating Supplies

Must report CMP materials for the second term by February 1st

"Controlled Materials Plan" materials which railroads will require for maintenance and repair during the second quarter of 1943, may be reported to the War Production Board on the same forms which are used in obtaining materials under the P-88 order, but CMP materials must be shown separately from the other materials and reports must be filed with WPB by February 1, according to instructions issued to the railroads by the Transportation Equipment Division. The instructions, which prescribe numerous revisions in the previous use of Form 351, in order to adapt existing methods of reporting materials to the Controlled Materials Plan recently announced by WPB, until such time as new forms are printed, are as follows:

TO HOLDERS OF ORDER P-88:

Instructions for filing requests for second quarter material for maintenance and repair.

General.—The Transportation Equipment Division is engaged in the problem of integrating the needs of the transportation industrry for maintenance and repair materials with the procedure under the Controlled Materials Plan. In order to be in position to bring these requirements under the Plan it will be necessary to have requests for allotment of Controlled Materials and requests for authorization for other C. M. P. Materials and fabricated parts submitted not later than February 1, 1943, covering second quarter 1943 requirements. These requests should be submitted on Form PD-351 as indicated below.

1. Controlled Materials.—"Controlled Materials" as defined in "Controlled Materials Plan, General Instructions, November 14, 1942," are carbon steel, alloy steel, copper and copper base alloys and aluminum. These materials should be listed in Column (1) of Form PD-351 in the order and with the code numbers as shown in the instruction booklet noted above. Under Column (3), "Unit of Measure" show net tons for carbon steel and pounds for all other materials except wood. Columns (4) and (5) may be left blank. Under Column (6) show amount used third quarter of 1942 and under Column (7) show inventory September 30, 1942. These two columns will repeat information presented on Form PD-351 request for first quarter 1943 requirements but with items consolidated in accordance with the above noted code numbers. Under Column (8) show the amount of anticipated *use* of material in second quarter 1943 and under Column (9) show desired receipts from mills, foundries, or other sources of supply during the second quarter 1943. Unless statement is attached to the Form PD-351 indicating otherwise it will be assumed that deliveries from the mills can be made in equal installments in each month of the quarter.

The following special instructions should be noted in connection with items under "Controlled Materials":

(a) Show one item to cover firebox and boiler plate and a second item to cover all other plate.

(b) Show the following as separate items at the bottom of list under "Controlled Materials":
  (i) Axles, new, loose, item 2056-A
  (ii) Wheels, rolled steel, new loose, item 2056-B
  (iii) Locomotive tires, new loose, item 2056-C
  (iv) Bolsters, cast steel
  (v) Couplers and yokes, cast steel
  (vi) Side frames, cast steel
  (vii) Brake shoes
  (viii) Wheels, cast iron, new loose

(ix) Babbitt lined rolling stock journal bearings (including tender)

If any items of Controlled Materials or any items under (b) of this paragraph are purchased on exchange contracts or agreements (toll agreements) please indicate in Column (10) the percentage of the amount requested in Column (9) which will be purchased on such toll agreements.

The following special items heretofore called for are eliminated:

(c) Wheels, cast steel. Any new cast steel wheels (including wheel centers) should be included under "Cast Steel," Code No. 2036 or 2536.

(d) Locomotive crown brasses. If purchased as rough brass castings include under Code No. 3201. If purchased finished include as fabricated part as explained below.

(e) Rail bonding wire, include under Code No. 3101 or 2061.

(f) Train service hose, include as fabricated item.

Special attention is called to the new definition of "track accessories."

2. Other C. M. P. Materials.—C. M. P. Materials, other than Controlled materials, are listed in "Controlled Materials Plan General Instructions, November 14, 1942," and include such items as mercury, nickel and wood. These materials should be listed in Column (1) of Form PD-351 in the order and with the code numbers as shown in the instruction booklet noted above. Under Column (3), "Unit of Measure," show pounds in all cases. Columns (4) and (5) may be left blank. Under Column (6) show amount used third quarter of 1942 and under Column (7) show inventory September 30, 1942. Under Column (8) show amount of anticipated *use* of material in second quarter 1943 and under Column (9) show desired receipt from mill, foundry, or other source of supply during second quarter 1943.

Attention is called to the asterisk on page 21 of the bulletin of November 14, 1942, regarding metallic content of alloys.

3. Fabricated Parts.—In Column (1) of Form PD-351 list AAR Standard Material Classification accounts by headings, such as:

"Class 1-A, Frogs, switches and crossings and parts for same."

"Class 1-B, Track fastenings, track bolts, spikes, etc."

Leave Columns (2) (3) (4) and (5) blank. In Column (6) show the money value of material in the account classification used during the third quarter 1942; in Column (7) the money value inventory as of September 30, 1942; and in Column (8) the estimated money value use in the second quarter 1943; and in Column (9) the estimated money value receipts in second quarter 1943. The money value in each column of each classification *should not include:*

CMP Materials
The special nine items listed under (1) (b) above
Ballast
Relay rail
Arch brick
Fuel
Ice, sawdust, hay, feed, straw
Stationery
Food

Consideration is being given to the problem presented by railroads which do not keep material accounts under AAR Standard Classifications. For the report of February 1, 1943, such roads should list accounts in their own individual classifications giving brief description of each class, observing the instructions in the paragraph next above.

4. Small Railroads.—Small railroad companies whose total purchases in the second quarter 1943 will not exceed $25,000 for materials for maintenance and repair can, if they so desire, submit on Form PD-351 one line showing total money value in Columns (6), (7), (8) and (9) covering all purchases except Controlled Materials. Controlled Materials will be secured under alotment number and hence must be submitted separately.

Maritime Commission Calls for Land Grant Rate Benefits

On the initiative of Commissioner Thomas M. Woodward a resolution has been prepared by the Maritime Commission in which it asserts its right to benefit by the exemption allowed government military and naval property and personnel when the Transportation Act of 1940 otherwise abolished land grant rate reductions.

"As of December 8, 1941," the resolution reads, "all vessels then in the process of construction and thereafter to be constructed were to be devoted primarily to the purposes of war rather than to the purposes of commerce." Similarly, it asserts, as of that date "all materials, equipment and supplies" purchased by the commission or on its behalf for ship construction were "military or naval property of the United States." As the Transportation Act of 1940, by Section 321, Part II, Title III, specifically exempts "military or naval property of the United States," such exemption applies to materials used in the construction of ships for the commission, the resolution states.

Another clause in the resolution authorizes and directs officers of the commission to "take any and all actions necessary and proper to obtain the benefit of land grant freight rates."

W. S. Carr on Active Duty with 729th Engineer Battalion

William S. Carr, assistant superintendent of the New Haven division of the New York, New Haven & Hartford, who left that position on November 30 to take active command of the 729th Engineer Battalion, Railway Operating, was graduated as a lieutenant colonel from the Atlantic Coast Transport Corps' Officers Training School at Ft. Slocum, N. Y., on Janury 6.

During World War I, Mr. Carr was engaged in military intelligence work. He was appointed a major in the 511th Engineer Battalion, Reserve Corps of Engineers (which has since been changed to the 729th) in May, 1934. In September, 1941, he was appointed lieutenant colonel. In building up his unit to the required strength, Lieutenant Colonel Carr has drawn to a considerable extent upon the New Haven for his staff. The unit is set up as a division of a railroad and Lieutenant Colonel Carr's position corresponds roughly to that of a division superintendent.

Lieut. Col. W. S. Carr

Lieutenant Colonel Carr has been railroading since he was 16, when he worked as a spare block operator on the New York, Susquehanna & Western. He later worked on the Erie and the Canadian Pacific. In July, 1913, he took a job as a spare operator for the New Haven. He advanced through the positions of train dispatcher and headquarters trainmaster, and in December, 1934, became assistant superintendent at New Haven. He also, while stationed at Worcester, Mass., organized the Railroad Employees & Taxpayers Association of Massachusetts, serving as its president until 1936.

Brown to Succeed Henderson as Price Administrator

President Roosevelt on January 11 did the expected thing with respect to a successor to Leon Henderson as administrator of the Office of Price Administration, sending to the Senate the nomination of former Senator Prentiss M. Brown of Michigan for the position. Mr. Brown, a Democrat, was defeated for reelection last November.

Another Railway Battalion to Train on the Southern

Because of the satisfactory manner in which the Southern Railway System trained its own 727th Engineer Battalion—the first of several railroad battalions organized to operate military railroads—the War Department has selected the Southern for the training of another Battalion, it has been announced by Brigadier General Carl R. Gray, Jr., General Manager of the United States Military Railway Service.

"We have selected the 715th Operating Battalion (affiliated with, officered by, and with a great many of the enlisted men from the Illinois Central) as the battalion that we would like to train on the rails of the Southern Railway in exactly the same manner as we have just satisfactorily completed the training of the 727th," stated General Gray. "The spirit has been so fine; the character and excellence of the instruction and demonstration by the Southern Raliway System employees has been so wonderful, that I have every belief that they will gladly accept this greater responsibility which they are now asked to assume."

The 715th Operating Battalion will receive basic training in all phases of railway operation on the Southern's line between Meridian, Miss., and New Orleans, La., where the 727th underwent training during the latter part of 1942. Headquarters will be located at Hattiesburg, Miss.

In a commendatory letter to Harry A. DeButts, vice-president in charge of operation of the Southern Railway System, General Gray said:

"I am taking this means of addressing you, with the hope that you will find a way to indicate to each individual employee their government's and my personal gratitude and appreciation for their successful cooperation, co-ordination and assistance in the training of the 727th Battalion. They truly have been soldiers;

they truly have been Americans; and they are entitled to and do hereby receive from me the highest praise that I know how to give."

Conversion of Old Pullmans Adds 35,000 Coach Seats

Wartime material shortages which have made it impossible for railroads to obtain new passenger cars have resulted in the conversion of nearly 800 lounge, observation, club or parlor cars to coaches or troop sleeping cars, the Office of Defense Transportation announced January 9. It is estimated that conversions completed or now in progress in railroad and Pullman shops will add to the total passenger carrying capacity of the railroads about 35,000 seats, as well as a large but undetermined number of berth spaces.

During 1942, the announcement continues, the Pullman Company sold to railroads for conversion into coaches 141 club cars, 47 observation cars, and 314 parlor cars. Pullman's own shops undertook the conversion of 107 other parlor cars and 153 obsolete sleeping cars into three-tier sleeping cars for troop movement. A large proportion of these cars had been stored unserviceable. In addition, four regularly assigned Pullman sleeping cars were sold for conversion into coaches, while 16 were remodeled, half of them into the three-tier troop cars. These conversions, it was pointed out, are in addition to the reconditioning in 1941 of some 1,500 surplus Pullman sleepers for troop use.

Most of the coaches resulting from the conversion program are of more or less standard arrangement, seating 60 or 70 persons, the report adds. Some experimental seating arrangements have been tried on a limited scale in which accommodations are provided for about 100 persons. Slatted wood seats were used on 32 cars intended for short runs. In fitting up some of the unserviceable cars it was necessary to use oil lamps, the ODT remarks, because of the shortage of electrical equipment.

Senators Hear More About WPB Requisitioning Activities

Another hearing was held this week in connection with the Senate interstate commerce subcommittee's investigation of War Production Board rail-requisitioning activities. Previously the subcommittee had been in recess since the early-December sessions reported in the *Railway Age* of December 5, page 937.

With Chairman Johnson, Democrat of Colorado, and Senator Reed, Republican of Kansas, in attendance, this week's session heard testimony of Ralph H. Jewell, head of the Office of Defense Transportation's Rail Abandonment Section; Arden Yinkey, director of WPB's Special Projects Salvage Branch; and Lawrence M. Lombard, counsel for WPB's Conservation Division. As had been brought out at the previous hearings, it was developed again that WPB now has enough rail to take care of foreseeable demands.

Whether or not there will be further requisitioning will depend upon the outcome of requirements studies being made by WPB's Transportation Equipment Division. In that connection Senators Johnson and Reed asked to be advised in the event of a decision to go in for more requisitioning; and the WPB representatives indicated that they would meet the senators' request.

Meanwhile it was brought out that ODT turned back to WPB 71 requisitioning proposals because there was no immediate urgency for requisitioning action. In other four cases ODT made the certifications, but is now reviewing them and has asked that requisitioning be delayed. These are two Kansas branch lines of the Atchison, Topeka & Santa Fe, a branch line of the Oregon-Washington, and the Illinois Terminal.

Mr. Yinkey testified that up to the end of 1942, WPB had obtained five to seven million feet of rail through negotiations with the railroads. The steel came from side tracks, spurs, and abandoned facilities.

Leasing 706 Locomotives Eases Motive Power Shortage

Latest available reports are said by the Office of Defense Transportation to show that 469 freight locomotives, 65 passenger locomotives, 6 all-purpose locomotives, and 166 switching locomotives have been leased by railroads with a motive power surplus to other roads suffering from serious power shortages. Such shifting of equipment from one road to another has promoted maximum use of motive power under wartime traffic demands, the ODT points out, and has averted difficult situations that threatened to develop before construction of the 386 new locomotives authorized in November, 1942, by the War Production Board.

Among instances cited by the ODT of leasing arrangements made as the result of co-operation between the railroads, the Association of American Railroads, and the ODT, is the transfer of locomotives to other roads from the Duluth, Missabe & Iron Range at the close of the Great Lakes navigation season. Of these, 4 went to the Denver & Rio Grande Western, 4 to the Great Northern, 3 to the Western Pacific, and 7 to the Southern Pacific. In addition, 2 new locomotives ordered by the D. M. & I. R. were delivered to the D. & R. G. W. for use until March, when, with the others, they will be turned back to the owning road as the iron ore movement is resumed. By that time it is expected that new locomotives will reach the roads now leasing the D. M. & I. R. power.

Another example of locomotive transfer reported by the ODT involves three railroads. The D. & R. G. W., having obtained 10 Missouri Pacific locomotives, was able to lease 10 of its own to its western connection, the Western Pacific. The Bingham & Garfield also obtained a locomotive from the Denver & Rio Grande Western.

The Chicago & North Western, which had 108 locomotives available for disposal to other roads, has sold some of these to the Mexican government, the ODT states, but most of them have been leased. Roads now using C. & N. W. power include the Atlantic Coast Line, Southern, Seaboard Air Line, Missouri Pacific, and Kansas City Southern. Variations in clearance limitations, load limits, signal equipment and other conditions have restricted the scope of the leasing program, the ODT adds.

Co-operation between railroads to meet the wartime emergency has not been confined to locomotive leasing, the announcement continues, and about a dozen roads have undertaken repair work on off-line locomotives. One large project of this nature, shared by several roads, was the repair of 50 used locomotives sold by various roads to Mexico. In addition, the Norfolk & Western has repaired 52 locomotives for other roads, including 14 for the Atlantic Coast Line and 32 for the Seaboard Air Line.

Railroading Is Not Easy in the Reich

The impairment of the Reich's transportation facilities may prove to be a major factor contributing to the eventual weakening of the Nazi economic mechanism, according to an article by Sarah Saunders of the Department of Commerce, published in a recent issue of the Foreign Commerce Weekly.

To ease the present troublesome railway situation, the article says, a Central Traffic Planning Office has been created within the Reichsbahn's general management. This organization consists of one representative each from the coal, lumber, building, food-supply and armament industries. Included also in the membership are a representative of industry in general and a representative of inland waterways navigation. Regional branches have been set up to carry out regulations made by the central office.

The average haul per car is now 400 kilometers, as compared with 160 kilometers in 1937. The Reichsbahn, through an extensive propaganda campaign, has endeavored to induce shippers to restrict civilian shipping to only the most urgent demands. The shortage of cars has led to various methods for making the greatest possible use of all available facilities. A premium of 10 marks is offered if a car is loaded or unloaded short of the free-time allowance, while heavy demurrage is imposed for exceeding the time allowance. Restrictions have been placed on the size of packages shipped. Production is being concentrated in fewer factories and sales by factories must be kept within their own district, except when the service is for the army or officialdom. This latter restriction has resulted in a regional exchange of customers by some industrial branches. Bulk shipments for industry must also be ordered from the nearest source of supply.

In their attempt to use Russian railroads in occupied territory, the Germans do not seem to have met with much success. Because the Russians have applied the "scorched earth" policy to their railways, particularly their rolling stock, the Germans have been forced to relay the Russian broad-gage track to enable them to use European standard-gage equipment. Any equipment captured from the Soviet, on the other hand, must be converted before it can be used.

Labor has also been a problem. Russian prisoners, German labor groups and recipients of German "protection" in the occupied countries (particularly Poland and

Norway) have been used extensively in building railways and roads and (with the exception of prisoners) in loading and unloading freight. Prisoners were formerly used in all types of loading operations, but their use was found to be impractical because serious sabotage resulted.

As for the inland waterways, the great increase in this form of transportation has resulted in a shortage of ship and barge space and has also brought severe restrictions. Maximum working-hour limits for barges have been discarded—they must be kept in operation as long as visibility conditions permit navigation without danger to the cargo. Checks are kept on voyages to prevent unnecessary waste of time. Vessels may be used only for transport and may not be used for storage as was the case heretofore. Maximum utilization of ship space is required or the transportation company forfeits its right to use a vessel—the vessel, its captain and the crew being leased to another company.

Trucks are being used for short hauls, only up to 15 kilometers, and truckers have been urged to shorten their loading and waiting time, which as a rule is greater than the actual driving time.

I. C. C. Service Orders

At the request of the Office of Defense Transportation, Division 3 of the Interstate Commerce Commission, to relieve traffic congestion in certain localities, has issued Service Orders No. 102 and 103. Order 102 requires that all coal originating on the Chesapeake & Ohio, or received by that road from its connections, destined to Toledo, Ohio, or points beyond, shall move to Toledo by the C. & O. without regard to shippers' routing, except cars consigned to points on the Detroit, Toledo & Ironton.

The same order provides that coal originating on or delivered to the Norfolk & Western in Virginia and West Virginia, destined to Toledo, Ohio, or points beyond, shall be diverted, up to 100 cars per day, to the Detroit, Toledo & Ironton at Ironton, Ohio, without regard to shippers' routing. This order was issued January 8 to be effective January 18.

Service Order No. 103, issued and effective January 12, provides that grain in carload lots shall not be accepted for movement through the United States from points in one foreign country to points in another foreign country, and cars shall not be provided for such movement, except under special permit from the commission.

Record Export Traffic in '42

Railroads handled without congestion in 1942 the greatest volume of export freight traffic on record, according to the Association of American Railroads. Every port in the United States is in a completely "liquid" condition, the A. A. R. added.

Cars of export freight, excluding grain and coal, unloaded at all ports in this country in 1942 totaled 859,276 compared with 632,083 cars in 1941, or an increase of 36 per cent. Approximately 2,500 cars of export freight are now being unloaded daily.

The number of cars of export freight unloaded at North Atlantic ports in 1942 was nearly 16 per cent greater than the number handled in 1918 in the first World War. The average tonnage per car in 1942, however, was considerably greater than the average in 1918. In addition to the heavy increase in movement through the North Atlantic ports there is in this war a very heavy movement of export freight through other seaports. Approximately one-third of the total export freight now handled is moving to Pacific ports, in contrast to a very small movement at the time of the first World War.

A survey of port capacity shows that every North Atlantic port can handle much more export freight than was moved to those ports by the railroads in 1942.

Export grain unloaded at all ports in 1942 totaled 30,315 cars compared with 48,666 cars in 1941 or a decrease of 38 per cent. Coastwise and intercoastal freight unloaded at all ports in the past year totaled 31,084 cars compared with 199,585 cars in 1941, or a decrease of 84 per cent. The character of freight handled at the various ports has materially changed in recent months compared with the early part of 1941. Of the total amount handled in October, 1942, export freight other than grain amounted to 96 per cent, export grain 3 per cent and coastwise and intercoastal only 1 per cent. In January, 1941, export traffic other than grain accounted for 67 per cent, export grain 3 per cent, and coastwise and intercoastal 30 per cent.

ODT's "Claimant Agency" Status Officially Announced

Official announcement of the fact that the Office of Defense Transportation had been made a "claimant agency" under the War Production Board's Controlled Materials Plan was made by WPB on January 8. To perform the functions thus developing upon ODT, Director Eastman on the following day announced the establishment of a Division of Material and Equipment Requirements, replacing the Section of Materials and Equipment.

As noted in the *Railway Age* of December 19, 1942, page 1007, where the decision to make ODT a claimant agency was reported, the WPB action takes the transportation industry out from under the wing of the Office of Civilian Supply and gives it a place for itself on WPB's Requirements Committee which doles out available materials. The WPB announcement said that invitations to nominate members to represent them on that committee have been sent to the newly-designated claimant agencies. In addition to ODT, the latter include the National Housing Agency, Office of Rubber Director, Petroleum Administrator for War, Food Administrator, and Facilities Bureau of WPB. The seven original claimant agencies, which retain that status, are Army, Navy, Air Forces, Maritime Commission, Office of Civilian Supply, lend-Lease, and Board of Economic Warfare.

"Claimant agencies," as the WPB announcement explained, "act as spokesmen for the various 'customers' using critical materials. They are responsible for making up and presenting their respective programs and compiling requirements of materials to meet them. This is being done both for current requirements and for future requirements to be submitted under the Controlled Materials Plan when it becomes effective April 1.

"Each claimant acts as proponent of its own program and carefully examines the programs of others. In this way views of all interested parties are expressed. After full discussions of the programs and requests of the respective claimants, the chairman of the Requirements Committee, with the advice of the committee, makes allotments of materials to meet definite approved programs. If adjustments in individual programs are necessary as a result of the final allotment, the claimant is responsible for making them. The claimant is also responsible for seeing that the approved program is carried out."

The ODT organization change makes Warren W. Kelly, who has been director of the Section of Materials and Equipment, director of the new Division of Material and Equipment Requirements. Mr. Kelly, former general purchasing agent of the Atchison, Topeka & Santa Fe, came to ODT last June, and his photograph, together with a sketch of his career, appeared in the *Railway Age* of June 20, 1942, page 1214. Associate director of the new division will be A. L. Sorensen, former manager of stores of the Erie who has been assistant to the vice-president, Operations and Maintenance Department, Association of American Railroads, since early last year. Mr. Sorensen's photograph and a sketch of his career appeared in the *Railway Age* of March 14, 1942, page 570. Carroll W. Brown, who has been assistant director of the replaced section, will continue as assistant director of the new division.

The changes, according to the ODT announcement, became effective January 1; and Mr. Kelly in his new role will report to General Charles D. Young, assistant director of ODT. The functions of the new division were summarized in the announcement as follows:

1. To gather from other divisions of ODT, and other sources, estimates of the requirements of domestic transportation for materials and equipment.

2. To compile these estimates into an over-all integrated domestic transportation requirements program for his approval.

3. To prepare the approved program for presentation to WPB.

4. To arrange, with the advice of other ODT divisions, proper allocations of materials and equipment in accordance with WPB's determination and allotment of the program's requirements.

5. To arrange for the necessary implementation, so that materials and equipment may be forthcoming in accordance with approved schedules.

6. To represent ODT on the various WPB Industry and Material Division Requirement committees.

7. To act as liaison between ODT and all government and private agencies on matters concerning material and equipment requirements for which ODT is claimant agency.

GENERAL NEWS

Icy Tender Found Violation of Law

Roads' liability under Boiler Inspection Act does not depend on negligence

Railroads are bound to provide equipment in condition safe to be used, and to maintain it in that condition at all times while it is being operated, the United States Supreme Court has decided, and are liable for injuries suffered by employees on duty resulting from failure to maintain it in such condition without regard to negligence on its own part or that of the employee.

The particular case on which this opinion of the court was based, as announced January 11, is *Lilly versus Grand Trunk Western.*

The employee involved was a brakeman who slipped on ice on a locomotive tender tank while attempting to pull a water spout into position over the tender manhole, then fell to the ground, suffering injuries for which he sought damages. A jury in an Illinois state court returned a verdict in favor of the brakeman, awarding him $32,500 damages, but on appeal the state Appellate Court entered judgment, for the railroad. After the Supreme Court of Illinois had refused leave to appeal, the case was taken to the United States Supreme Court, which reviewed the case because it involved interpretations of federal statutes, particularly the Boiler Inspection Act.

As the circumstances are outlined in the Supreme Court opinion, delivered by Justice Murphy, at the time of the accident the surface between the tender manhole and the fuel space, an area of some six square feet, was covered with ice; there was or had been a small leak at the collar of the manhole from which water flowed onto this surface; the brakeman stood on this icy surface while reaching with a rod for the water spout; and as he pulled on the spout his feet slipped on the ice and the rod at the same time slipped on the spout, causing him to lose his balance and fall to the ground.

In the trial court the jury was required to determine whether or not there was a leak in or near the manhole collar at the time of the accident, and this question was answered in the negative. On that ground the railroad's counsel contended, and the appellate court decided, that all question of violation of the Boiler Inspection Act was removed from the case, that there was no evidence of negligence and that the employee assumed the risk, if any.

In reviewing the case the Supreme Court considered two points: (1) Did the presence of ice on the tender top constitute violation of the Boiler Inspection Act, irrespective of any leak in the manhole collar; and (2) Was the jury properly instructed in this respect?

To both questions the court's answer is affirmative.

"Negligence," the court ruled, "is not the basis for liability under the Act." Citing section 2 of the Act—which reads in part, "It shall be unlawful for any carrier to use or permit to be used on its line any locomotive unless . . . all parts and appurtenances thereof are in proper condition and safe to operate in the service to which the same are put, that the same may be employed in the active service of such carrier without unnecessary peril to life or limb"—the court remarks that use of a tender covered with ice does involve "unnecessary peril to life or limb." In support of its conclusion it refers to rule No. 153 of the Interstate Commerce Commission that the "top of tender behind fuel space shall be kept clean and means provided to carry off waste water." Here, it says, the word "clean" involves the "continuing duty" of removing "all extraneous substances" which might make standing hazardous.

The court finds without merit the contention of counsel that the Boiler Inspection Act applies merely to defects on construction or mechanical operation, and remarks that "without limitation" the Act refers to equipment "in proper condition and safe to operate."

Continuing, the Act says, "Conditions other than mechanical imperfections can plainly render equipment unsafe to operate without unnecessary peril to life or limb."

In reaching its conclusion on the second question considered by it, the Supreme Court decided that the jury was properly instructed in the trial court, so that no technical ground for reversing the verdict could be found in this contention.

Having ruled that the brakeman's injuries were the result of violation of the Boiler Inspection Act by the railroad, the questions of contributory negligence and assumption of risk are not available, the court's opinion reads, under sections 3 and 4 of the Federal Employers' Liability Act, "as those sections existed at the date of the accident."

This disposition of the case, it says, makes it unnecessary to consider either whether the railroad was generally negligent, or, if it was in fact negligent, whether the 1939 amendment to section 4 of the Employers' Liability Act—which completely abolishes the defense of assumption of liability of risk by the employee—should be applied retroactively.

Fiscal '44 Budget Goes to Congress

Includes usual I. C. C. Retirement Board and Mediation Board estimates

Estimates for appropriations to cover activities of the Interstate Commerce Commission, Railroad Retirement Board, and National Mediation Board during the fiscal year ending June 30, 1944, were included in the budget for that year which President Roosevelt submitted to Congress with his annual budget message on January 11. No estimate was submitted for the Office of Defense Transportation, although its requirements are contemplated in the $100 billion estimated war bill for fiscal 1944.

In the latter connection, the President broke down the $100 billion into "broad categories" only, continuing to say that he would later "submit the necessary information upon which Congress can base war appropriations for the fiscal year 1944." For the current fiscal year ending June 30, 1943, ODT has received appropriations totaling $12,416,000.

Meanwhile the budget includes no fiscal 1944 estimate for the Board of Investigation and Research created by the Transportation Act of 1940. The explanatory statement says that the estimate was omitted "inasmuch as the 1943 appropriation provided for full completion of the special studies in the field of transportation for which the Board was created." Thus did the Bureau of the Budget accept as binding upon it Congress' stipulation that the Board's fiscal 1943 appropriation, totaling $643,330, "shall be so used to complete the studies, investigations and reports authorized and required by part I, title III, of the Transportation Act of 1940."

The Congressional stipulation, made in the House of Representatives, was retained at the insistence of House conferees in the final version of the appropriation measure, the First Supplemental National Defense Appropriation Act, 1943, enacted last June. As noted in the *Railway Age* of August 1, 1942, page 189, Majority Leader Barkley, in agreeing to the retention, asserted that the provision "certainly cannot bind any future Congress . . ."; but Representative Cannon, Democrat of Missouri, who was chairman of the House conferees, expressed a different view in a letter to Senator McKellar, Democrat of Tennessee, who was chairman of the Senate appropriations subcommittee. Referring to the stipulation, Mr. Cannon declared that "it seems to me that this is clear and means what it plainly says and should not be held out to the

(*Continued on page 225*)

New Congress Gets Usual Heap of Bills

Most of those of interest to railroads are old ones now reintroduced

Convening for its initial session last week, the Seventy-eighth Congress received that usual flood of bills which comes on the opening days of a new Congress. All measures pending before the Seventy-seventh Congress in various stages short of enactment died with the sine die adjournment of December 16, 1942, and as was to be expected the great majority of the measures now being offered are the old bills reintroduced.

President Roosevelt delivered his annual message on January 7, while his budget message went up on the 11th, as noted elsewhere in this issue. The annual message was in the main a review of the country's war effort, in which connection the President said that, as spokesmen for the United States Government, he and the Congress "take off our hats to those responsible for our American production—to the owners, managers, and supervisors, to the draftsmen and engineers, to the workers—men and women—in the factories and arsenals and shipyards and mines and mills and forests and railroads and highways."

Bills of interest to the railroads, together with their sponsors, include the following:

Introduced in House of Representatives

H. R. 44, to provide for a 25 per cent increase in annuities under the Railroad Retirement Act, 1937. (Cannon, Democrat of Florida).

H. R. 56, to provide for a defense highway in the United States to serve as a link in connecting the Inter-American Highway with the Alaskan Highway. (Hare, Democrat of South Carolina).

H. R. 94, to prevent and make unlawful the practice of law before Government Departments, bureaus, commissions, and their agencies by those other than duly licensed attorneys at law. (O'Toole, Democrat of New York).

H. R. 103 and 104, to liberalize benefit provisions of the Railroad Retirement Act. (Van Zandt, Republican of Pennsylvania).

H. R. 331, to authorize the construction of a military supply highway to Alaska. (Delegate Dimond, Democrat of Alaska).

H. R. 356, to amend the Bituminous Coal Act of 1937, as amended, and for other purposes. (Jenkins, Republican of Ohio).

H. R. 364, to amend Part II of the Interstate Commerce Act by striking out present section 226 and substituting a new section 226. This bill would give the Interstate Commerce Commission power, after complaint and hearing, to set aside state regulations governing sizes and weights of motor vehicles. (Magnuson, Democrat of Washington).

H. R. 365, to amend Part I of the Interstate Commerce Act to prohibit agreements and understandings between certain common carriers in connection with the furnishing of passenger service. (Magnuson, Democrat of Washington).

H. R. 470, to amend section 216 of Part II of the Interstate Commerce Act, as amended, to give shippers the right to designate the routing of shipments by motor vehicle in certain cases. (Jonkman, Republican of Michigan).

H. R. 488, to liberalize benefit provisions of the Railroad Retirement Act. (Angell, Republican of Oregon).

H. R. 499, to amend the Communications Act of 1934, as amended, to permit consolidations and mergers of telegraph carriers, and for other purposes. (Bulwinkle, Democrat of North Carolina).

H. R. 695, relating to through rates in the case of certain property of the United States manufactured or processed in transit. (Kefauver, Democrat of Tennessee).

H. R. 697, relating to the original jurisdiction of district courts of suits or proceedings arising under section 20(11), 20(12), 219 or 413 of the Interstate Commerce Act, and to the removal of such suits and proceedings from state courts. (Kefauver, Democrat of Tennessee).

H. R. 718, to liberalize benefit provisions of the Railroad Retirement Act. (Pace, Democrat of Georgia).

H. R. 776, to improve the facilities for transcontinental motor transportation; to provide additional facilities for the national defense; to aid in the relief of unemployment; to promote the public safety; and for other purposes. (Randolph, Democrat of West Virginia).

H. R. 816, to revise the administrative procedure of federal agencies; to establish the Office of Federal Administrative Procedure; to provide for hearing commissioners; to authorize declaratory rulings by administrative agencies; and for other purposes. (Celler, Democrat of New York).

H. R. 860, to liberalize benefit provisions of the Railroad Retirement Act. (Hendricks, Democrat of Florida).

H. R. 875, to restore standard time during the months of January, February, November, and December. (Knutson, Republican of Minnesota).

H. R. 892, to provide for the construction and operation by the federal government of a system of new military superhighways and airports. . . . (Wene, Democrat of New Jersey).

H. R. 908, to amend the Railroad Retirement Act. (Peterson, Democrat of Florida).

H. R. 917, authorizing the construction of one or more pipe lines for the transportation of petroleum and its products from states in the Middle West and Southwest to the vicinity of New York City. (Fish, Republican of New York).

H. R. 1006, authorizing negotiations and providing for the construction, maintenance, and operation of an interoceanic canal over Nicaraguan territory. (Izac, Democrat of California).

H. R. 1026, to improve the navigability of the Lake-to-the-Gulf Waterway. (Reed, Republican of Illinois).

H. R. 1122 and 1123, to liberalize benefit provisions of the Railroad Retirement Act. (Shafer, Republican of Wisconsin).

H. J. Res. 35, providing for payments for the purpose of equalizing as between the different regions or territories of the United States, freight charges for the transportation of defense materials during the existing emergency. (Kefauver, Democrat of Tennessee).

H. J. Res. 36, to establish the National Commission for Post-War Reconstruction. (Voorhis, Democrat of California).

H. Con. Res. 2, to establish a Joint Committee on Planning and Reconstruction, a Congressional Planning and Reconstruction Service. (Dirksen, Republican of Illinois).

Introduced in Senate

S. 140, to amend the Railroad Retirement Act. (Davis, Republican of Pennsylvania).

S. 147, to amend the Bituminous Coal Act of 1937. (Guffey, Democrat of Pennsylvania).

S. 154, providing for federal regulation of sizes and weights of motor vehicles operating on certain highways. (Andrews, Democrat of Florida).

S. 158, to amend the Communications Act of 1934, as amended, to permit consolidations and mergers of domestic telegraph carriers, and for other purposes. (McFarland, Democrat of Arizona—for himself and White, Republican of Maine).

S. 181, to liberalize benefit provisions of the Railroad Retirement Act. (La Follette, Progressive of Wisconsin).

S. 214, to consolidate the functions of furnishing legal services to government agencies in the Department of Justice. (Holman, Republican of Oregon).

S. 217, to continue in effect the act entitled "An act to authorize the President of the United States to requisition property required for the defense of the United States," approved October 16, 1941. (Reynolds, Democrat of North Carolina).

S. 236, to amend section 5 of the Interstate Commerce Act, as amended, with respect to the pooling and division of certain revenues of carriers subject to such act. (Reed, Republican of Kansas).

S. 324, to revise the administrative procedure of federal agencies; to establish the Office of Federal Administrative Procedure; to provide for hearing commissioners; to authorize declaratory rulings by administrative agencies; and for other purposes. (Hatch, Democrat of New Mexico—for himself and Van Nuys, Democrat of Indiana).

S. 325, to prescribe fair standards of duty and procedure of administrative officers and agencies, to establish an administrative code, and for other purposes. (Hatch, Democrat of New Mexico—for himself and Van Nuys, Democrat of Indiana).

Estimate of '42 Net Revised Downward

Statistics bureau notes few roads have reserves for under maintenance

With actual figures for 11 months in hand, the Interstate Commerce Commission's Bureau of Transport Economics and Statistics has revised downward its estimate of a month ago and now calculates that the 1942 net income of the Class I railroads "may exceed $950,000,000 but will hardly reach a billion." The revised estimate came in the latest issue of the Bureau's Monthly Comment on Transportation Statistics, and compares with the previous issue's statement that it was "not improbable" that the 1942 net income would "exceed one billion dollars."

Likewise did the Bureau lower its estimate of last year's net railway operating income, dropping it by $96,000,000 from $1,552,000,000 to $1,456,000,000. The following table shows how the latter is built up, the figures including actual results for 11 months and estimates for December:

	(Millions)
Freight revenue	$5,895
Passenger revenue	1,050
Other operating revenue	494
Total	7,439
Operating expenses	4,578
Net revenue from railway operations	2,861
Railway tax accruals	1,225
Equipment and joint facility rents	180
Net railway operating income	1,456

Attention is called to the fact that these figures are "without adjustment for inadequate maintenance." Also, it is stated that "the most uncertain item is the amount of tax accruals, which affects the final net railway operating income." The December net income, the Bureau says later on, "is generally substantially larger than that for November but by erratic percentages depending particularly on tax adjustments." However, from 1935 to 1941, December tax accruals averaged 88.5 per cent of the November accruals; and "on this basis the amount for December, 1942, would be about $105,000,000, and the total for the calendar year would be $1,225,000,000," the figure shown in the table.

With respect to the factor of "inadequate maintenance," the Bureau notes that from July through November only nine roads (making charges which aggregate $2,439,-101) have taken advantage of the commission's June, 1942, order whereby the carriers "are permitted to include in their operating expenses, when so authorized by the commission, charges representing the cost of repairs to way, structures, or equipment which cannot be made in the current year due to priorities for materials and supplies or shortage of labor." Deterring factors, it is suggested, "are the requirement to set aside cash, the necessity of showing that the specific work can not be done because of shortage of labor or material, and the fact that the sums so charged are not recognized as deductions for income tax purposes."

Reviewing financial results as of November 30, 1942, the statement points out that

for the 12 months ended at that time, gross revenues reached a total of "nearly $7,243 millions," including freight revenues of $5,802 millions and passenger revenues of $963 millions. In its review of carloading data, the Bureau shows that, while l. c. l. was the only one down in October and November, four commodity groups sank below 1941 levels in December. They were: L. c. l., Miscellaneous, Forest Products, and Ore. The 1.8 per cent drop in the Miscellaneous group ("by far the largest") is said to be "largely responsible" for the overall decline of 6.9 per cent in December loadings as compared with December, 1941. "To what extent the decline in miscellaneous loadings is to be attributed to increased loading per car, to a decrease in total tonnage hauled, or to a change in the composition of the traffic cannot be stated from reports now available."

Making what has become the usual observation to the effect that carloading figures now fail "to measure accurately the increase in tonnage hauled," the Bureau cites the latest available statistics of originated tonnage. These show that, for the first nine months of 1942, Class I roads originated 17.1 per cent more freight than in the comparable 1941 period. More detail of the tonnage originated is given in tabulations showing figures on individual commodities for the third quarter of 1942 with comparisons given for the third quarter of 1941.

One of these tables covers the 10 commodity classes which accounted for 63 per cent of the total carload tonnage originated during last year's third quarter. All showed increases as compared with 1941 save wheat, down 12 per cent, and petroleum oils, refined, down 26.4 per cent. A second table lists certain other important commodities showing either decreases or "exceptionally large increases"—also for 1942's third quarter as compared with 1941. There is indicated a 218.2 per cent increase in the originated tonnage of crude petroleum, which the Bureau thought it of interest to compare with "the large decline in tonnage of refined petroleum," noted above.

The crude petroleum increase was next to the largest shown in the second table where top listing went to the 250 per cent rise in butterine and margarine. Third was autotrucks, up 122.1 per cent; and then in turn came sugar beets, 119.4 per cent; meats, cured, dried, smoked, 105 per cent; cotton cloth and fabrics, 100 per cent. On the other hand there were substantial decreases, the largest being passenger automobiles, 82.4 per cent; bananas, 63.7 per cent; glass, flat, excl. plate, 38.3 per cent; lemons, limes, etc., 32 per cent; asphalt, 29.1 per cent.

Discussing quantities and cost of railroad fuel, the Bureau presents figures showing that the unit cost of coal for the 10 months, January to October, 1942, was $2.11 per net ton (mine purchases) as compared with $2.01 for the same 1941 period, an increase of 4.97 per cent. Fuel oil per barrel (42 gal.) was meanwhile up 7.87 per cent, from 89 cents to 96 cents, and Diesel fuel 12.24 per cent, from 4.41 cents per gallon to 4.95 cents.

Total purchases of coal were up 16.8 per cent; fuel oil, 22.5 per cent; and Diesel fuel, 57.1 per cent.

Employment data, presented on the basis of "total time paid for," show an October, 1942, figure 12.71 per cent higher than October, 1941's. Meanwhile the mid-month-count figures for October showed 8.44 per cent more employees than in October, 1941.

Source Book of Railway Wage Information

The Eastern Railroad Presidents' Conference has issued an 84-page pamphlet entitled "Railroad Wages Under the Amendment to the Emergency Price Control Act of 1942" which serves as a convenient documentary source book, supplementing the previous handbook on railway wages issued by the Eastern railroads. Taken together, these books are a factual aid to understanding, quite without parallel for convenience, comprehensiveness and reliability in the field they cover.

The new pamphlet contains *in extenso* the executive orders bearing on labor relations and price fixing, issued during the past year—together with memoranda of the parties and the agencies involved in the current controversy as to whether the machinery of the Railway Labor Act or the War Labor Board has the final decision on the railway wage level. A report on this controversy by Louis Stark is reprinted from the New York Times.

Non-Ops Wage Case

Mediation of the wage demands of the non-operating unions, which were begun by the National Mediation Board at Chicago on January 7, were continued during the current week.

Tariffs for Red-Cap Services to Be Weighed

The Interstate Commerce Commission will hear oral argument at Washington, D. C., on January 29 in the No. 28842 proceeding wherein the Dayton Union Railway Company has been called upon to show cause why it should not file tariffs covering charges for red-cap services.

Hearing Scheduled on Minimum Prices for Coal

Following applications from soft coal producers in the Southern Appalachian mining region, the Bituminous Coal Division of the Department of the Interior has ordered a public hearing preliminary to deciding what revisions, if any, are necessary in the minimum prices for bituminous coal established by it under provisions of the Bituminous Coal Act. The hearing will begin February 24 in Washington, D. C.

The statute provides that minimum prices must be adjusted whenever it is found that the "weighted" average cost of producing coal has changed more than two cents per ton in any established price area. Petitions filed by producers' boards of District No. 7—southern West Virginia—and District No. 8—southwestern West Virginia, western Virginia, eastern Kentucky, and northeastern Tennessee—allege that costs in those areas have increased more than five cents per ton since the last determination of minimum or "floor" prices by the division. These districts are parts of the so-called Price Area No. 1, which embraces the Appalachian field. The division points out that its own investigations indicate that costs have increased in the area about eight cents per ton since the existing minimum was set.

WPB Appointment

Edward Browning, Jr., who has recently been deputy director of stockpiling and shipping of the War Production Board's Division of Stockpiling and Transportation, on January 15 became director in charge of that branch of the division's activities, it was announced by W. Y. Elliott, director of the division. Mr. Browning succeeds Conant Brewer, who resigned to return to private industry.

Equipment Depreciation Rates

Equipment depreciation rates for the Albany & Northern, the Canton, the Chicago & Calumet River, and the Pittsburgh, Lisbon & Western have been prescribed by the Interstate Commerce Commission in a new series of sub-orders and modifications of previous sub-orders in the general proceeding, Depreciation Rates for Equipment of Steam Railroad Companies.

Strikes Down "Added Cost" Rates

Reporting after further hearing in the I. & S. No. 4690 proceeding where cost formulae developed by Ford K. Edwards, principal economist in charge of the Transportation Cost Section of its Bureau of Transport Economics and Statistics, were used for the first time as evidence of the compensatory character of l.c.l. rates, the Interstate Commerce Commission has ordered the Boston & Maine and Maine Central to cancel schedules which have been in effect since March 5, 1940.

The full commission's finding that the rates are "below a reasonable minimum level and hence unlawful" reverses that decision of February 15, 1940, wherein Division 2 found the schedules justified. It is a six-to-four decision, although the majority report (following generally the proposed report of Examiner Konigsberg which was reviewed in the *Railway Age* of April 29, 1942, page 351) represents the view of only four commissioners. A separate concurring expression came from Commissioner Alldredge, while Commissioner Patterson concurred "in the result." Commissioner Aitchison dissented, and his brief expression was subscribed to by Commissioners Mahaffie, Miller and Splawn.

The rate adjustment involved is that wherein the two roads reduced charges between points in Maine, Massachusetts and New Hampshire on practically all package freight rated first, second, third, and fourth class to the column 45 level, i.e., 90 per cent of fourth class. The further hearing out of which came the present report was ordered in response

to petitions from the New England Motor Rate Bureau and other trucking interests. The commission's adverse finding was based mainly upon its conception of its "duty" to prevent competitive rates from gravitating "to the lowest possible level."

It noted that the assailed rates exceed out-of-pocket costs except between Boston, Mass., Lynn and Salem on the one hand and Newcastle, Me., and Rockland on the other; but cited previous decisions to make the point that such costs "cannot, however, be used as a decisive factor in determining the reasonableness of the rates under consideration." Also, it was pointed out that the higher rates of competing motor carriers are held generally by commission minimum-rate orders; and the testimony of the motor carriers was "convincing" that they had suffered "a serious loss of business."

North Western Streamliner Diesels Do 517 Miles a Day

The five Diesel-electric locomotives used by the Chicago & North Western on its fleet of "400" streamliners have averaged 517 miles per day each during the first year of operation. The five locomotives were ordered early in 1941 for use on seven streamlined trains operating between Chicago and Milwaukee, Wis., Green Bay, Madison, Oshkosh, Manitowoc, Escanaba, Mich., Negaunee, and Ishpeming and the last was delivered in August of that year. Up to January 12, 1943, they had traveled 943,332 miles, excluding the mileage accumulated during several months of test runs prior to going into regular service.

C. D. O. A. Appoints New Secretary

Owing to the pressure of other duties in connection with his recent promotion to the position of assistant to the vice-president of the Chicago, Burlington & Quincy, F. L. Kartheiser has tendered his resignation as secretary-treasurer of the Car Department Officers' Association after serving the association in this capacity for five years. The board of directors has appointed F. H. Stremmel, assistant secretary, Association of American Railroads, Mechanical division, to fill Mr. Kartheiser's unexpired term of office. The business of the Car Department Officers' Association will be conducted by the new secretary-treasurer from his office at 6536 Oxford avenue, Chicago.

Commerce Department Gives 1942 Transportation Figures

On January 7 the Department of Commerce announced that a new monthly index of the "total volume of transportation," prepared in the department, indicated that the movement of passengers and commodities by all carriers combined was 28 per cent greater in 1942 than in 1941, "a record year-to-year gain." Commodity transportation, it stated, increased by 25 per cent, measured in ton-miles, while passenger miles increased by 45 per cent.

According to this source railroad freight traffic in 1942, in ton-miles, was one-third above 1941 and almost double the 1935-39 average. Railroad passenger-miles in 1942 increased more than 80 per cent over 1941, the report stated. A further increase of 10 to 15 per cent in freight movement in 1943 was predicted, while it was estimated that the increase in passenger traffic would be limited only by the equipment available.

Inter-city motor truck traffic in 1942 was 7 per cent above 1941, the announcement continued, while bus travel increased 50 per cent. Air commodity traffic was declared to have increased 65 per cent in 1942, as compared with 1941, while air passenger travel declined "slightly."

N. Y. Railroad Club to Hold Purchases and Stores Night

The New York Railroad Club will hold its first "Purchases and Stores Night" since 1937 when it meets on January 21 at the Engineering Societies Building, New York. Speakers for the evening include G. O. Beale, chief purchasing and stores officer, C. & O., who will talk on "Materials Inventories"; J. S. Fair, Jr., purchasing agent, P. R. R., whose topic will be "Future Problems in Railroad Purchasing"; J. E. May, fuel agent, B. & O., who will speak on "Bituminous Coal"; C. E. Smith, vice-president, N. Y., N. H. & H., who will discuss "Priorities and Controlled Materials Plan," and M. E. Towner, general purchasing agent, Western Maryland, whose talk will be on "Lumber and Crossties." F. S. Austin, purchasing agent of the New York Central, will introduce the speakers.

Illinois Terminal Will Not Be Abandoned

Service on 128 miles of line of the Illinois Terminal in Illinois will not be abandoned because the war effort needs the line. The railroad last week asked the Interstate Commerce Commission to postpone indefinitely consideration of the Terminal's petition to abandon its lines between Danville and Mackinaw Junction via Decatur. A. P. Titus, president, stated that "the rubber situation has become so serious since the abandonment was requested that it does not seem reasonable that we stop operating now in the face of transportation difficulties. The attempt to abandon has been made only because of the urgent need for scrap."

The War Production Board requisitioned the line in October but its action was stayed by an injunction obtained by the Illinois Commerce Commission. The state commission later ordered the railroad to improve the line.

December Employment 11.41 Per Cent Above 1941

Railroad employment increased 0.23 per cent—from 1,317,865 to 1,320,910—during the one-month period from mid-November to mid-December, and the December total was 11.41 per cent above the comparable 1941 figure, according to the latest summary of preliminary reports prepared by the Interstate Commerce Commission's Bureau of Transport Economics and Statistics. The index number, based on the 1935-1939 average as 100 and corrected for seasonal variation, was 132.8 for December, as compared with November's 128.2 and December, 1941's 119.2.

December employment in the maintenance of way and structures group was 2.06 per cent under November, but all other groups were up slightly, the range being from 0.33 per cent for the train and engine service group to 1.47 per cent for maintenance of equipment and stores. Meanwhile all groups were above December, 1941, the largest increase being the 19.58 per cent rise in the maintenance of way and structures group. Next in turn came the transportation group embracing yardmasters, switchtenders and hostlers, up 13.63 per cent, train and engine service, up 11.22 per cent, and professional, clerical and general, up 10.44 per cent.

Freight Car Loading

Loadings of revenue freight for the week ended January 9 totaled 716,272 cars, the Association of American Railroads announced on January 14. This was an increase of 95,224 cars, or 15.3 per cent, above the preceding week; a decrease of 20,700 cars, or 2.8 per cent, below the corresponding week last year, and an increase of 4,637 cars, or 0.7 per cent, above the comparable 1941 week.

As reported in last week's issue, loadings of revenue freight for the week ended January 2 totaled 621,048 cars, and the summary for that week, compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loadings

For the Week Ended Saturday, January 2

District	1943	1942	1941
Eastern	125,685	142,422	133,973
Allegheny	133,853	155,877	139,710
Pocahontas	41,386	44,191	39,525
Southern	94,749	105,850	97,403
Northwestern ..	68,587	74,333	68,447
Central Western	97,887	101,109	90,200
Southwestern ..	58,901	52,752	44,913
Total Western Districts	225,375	228,194	203,560
Total All Roads	621,048	676,534	614,171
Commodities			
Grain and grain products	39,888	32,021	26,806
Live stock.....	11,572	11,018	10,187
Coal	133,850	138,609	123,127
Coke	14,445	13,545	12,153
Forest products	26,343	32,660	29,819
Ore	13,558	13,024	12,623
Merchandise l.c.l.	75,686	123,113	125,101
Miscellaneous .	305,706	312,544	274,355
January 2.....	621,048	676,534	614,171
December 26...	591,595	606,502	545,307
December 19...	742,911	798,868	697,755
December 12...	740,336	807,225	736,340
December 5...	759,621	833,375	738,513

Blizzard Blitzes Train Orders on C. P. R.

Broken telegraph wires resulting from a severe blizzard threatened for a time to cause a complete tie-up of traffic between Montreal and Ottawa on the Canadian Pacific over the New Year holiday. All trains inbound to Montreal were unreported and all outbound trains were being held at Montreal as a safety measure, when it became impossible to deliver train orders to train crews eastbound from Ottawa to Montreal.

C. G. Nuthall, assistant to general superintendent of the Quebec district, managed to communicate with E. Bergeron, agent at the small town of Calumet on the north shore of the Ottawa river, whose line was still working. The line worked just long enough for Mr. Nuthall, who at

one time had worked as a train dispatcher, to dictate orders to Bergeron with the request that he try to get them through to eastbound train crews.

Mr. Bergeron started off in a truck, eventually gave that up for a sleigh and finally finished his 9-mile journey between Calumet and Van Kleek Hill on foot. He arrived ahead of the first eastbound train and gave his orders to the conductor. Eastbound trains were brought in, while westbound traffic was resumed with safety.

With information regarding "blacked-out" sections of the line secured from the crew of the eastbound train arriving at Van Kleek, the first westbound train, running in four sections and led by a snow-plow, arrived at its destination without mishap.

P. R. R. Station in New York Has Fluorescent American Flag

A 60-ft. fluorescent American flag now adorns the area between the main waiting room and the train concourse of New York's dimmed-out Pennsylvania station in New York. The flag was suggested by Raymond Loewy, industrial designer and consultant to the Pennsylvania. In order to activate the fluorescent-impregnated material, 12 concealed sources of invisible "black" light have been mounted on the ledges on opposite sides of the area where the flag is hung. The flag, which weighs 200 lb., is visible as far as the Seventh avenue entrance to the station.

The flag, lighted in this manner, is highly effective in getting attention in the extreme dimmed-out conditions which now prevail in this great and bustling terminal. Few theaters which strive for striking effects by the use of lights have ever achieved anything more dramatic than this Penn station display.

Labor Leaders Want to Clear Up Adjustment Board Cases

Director Eastman of the Office of Defense Transportation met in Washington, D. C., last week with representatives of management and the train service brotherhoods for initial discussions in connection with efforts of the labor leaders to relieve the congestion of cases pending before Division 1 of the National Railroad Adjustment Board. The meeting was held at the request of President Roosevelt, whose attention was called to the situation by the labor representatives; and further sessions were scheduled for January 16, 17, and 18 at Adjustment Board headquarters in Chicago.

More than 6,000 cases are pending before Division 1, which handles disputes involving train, engine and yard service. In their drive to relieve the congestion the labor leaders are proposing that the Board should adopt a policy of applying to cases outstanding precedents already established in similar cases.

Reed and Wheeler May Introduce Several Railroad Bills

Chairman Wheeler of the Senate committee on interstate commerce and Senator Reed, Republican of Kansas, are "desirous of proceeding in a constructive way to consider various phases of the railroad situation in the 78th Congress" and they "may" introduce "several bills which would furnish a basis for obtaining the views of all interested parties" through hearings before that committee, according to a January 6 letter which Senator Reed sent to Interstate Commerce Commissioner Charles D. Mahaffie.

The letter was written, as Senator Reed put it, to "reduce to definite form" the ideas behind his bill to give the I. C. C. power to require the pooling of revenues derived from general rate increases. The bill has been reintroduced in the present Congress as S. 236. After setting forth such ideas, however, the Senator went on to mention the more general plans of himself and Chairman Wheeler. These would be "as was informally developed in conversations between you, Senator Wheeler, and myself," Senator Reed told Commissioner Mahaffie.

Club Meetings

The Traffic Club of Philadelphia will hold its next meeting on January 19 at the Benjamin Franklin Hotel. The guest speaker will be Carveth Wells, explorer and author, who will address the meeting on "Africa and the Battle for Strategic Materials."

Ralph J. Feddor, general clerk, Chicago & North Western, has been appointed secretary of the Car Foremen's Association of Chicago to fill the unexpired term of George K. Oliver, assistant passenger car foreman, B. & O. C. T., who passed away on December 2, as reported in the *Railway Age* issue of December 19.

The Railroad Enthusiasts, Inc., New York division, will meet at 7:45 p. m. on January 22 in Rm. 2728 Grand Central Terminal, New York. John A. Hoyt, senior ranking locomotive engineer of the New York Central's electric division, who has operated the "20th Century Limited" for 15 years, will address the meeting on the topic, "In and Out of Grand Central Station for Half a Century." The N. Y. C.'s new sound film, "The Freight Yard," showing operations at the DeWitt yards near Syracuse, N. Y., will be shown.

Eastern Car Foremen Elect Officers

At their meeting held on January 8 in the Engineering Societies building, New York, members of the Eastern Car Foremen's Association elected the following to serve as their officers for the year 1943: President, B. F. Cordts, engineer, cars and shops, Independent Subway System, New York; first vice-president, K. H. Carpenter, superintendent car department, Delaware, Lackawanna & Western, Scranton, Pa.; second vice-president, F. H. Becherer, superintendent car department, Baltimore & Ohio, Baltimore, Md.; treasurer, T. G. Case, general car foreman, New York Central, New York, and secretary, W. P. Dizard, 30 Church street, New York.

Following the election of officers, a panel discussion was held relating to changes which have been made in the A. A. R. Rules of Interchange which were issued as of January 1, 1943. The discussion was led by G. B. Williamson, chief, A. A. R. Bureau, Baltimore & Ohio, Baltimore, Md. Mr. Williamson directed particular attention to the relaxation in certain rules which in his opinion were dictated by the war transportation situation. The effect of changes in these rules has been to expedite the movement of cars and to reduce paper work and billing incidental to strict interpretations of the former rules, according to Mr. Williamson. Participants in the discussion of the rule changes included represtntatives from most of the railroads in the central eastern area.

November Accident Statistics

The Interstate Commerce Commission on January 9 made public its Bureau of Transport Economics and Statistics' preliminary summary of steam railway accidents for November and last year's first 11 months. The compilation, which is subject to revision, follows:

	Month of November		11 months ended with November	
Item	1942	1941	1942	1941
Number of train accidents*	1,216	916	11,892	8,486
Number of casualties in train, train-service and nontrain accidents:				
Trespassers:				
Killed	121	160	1,900	2,005
Injured	117	142	1,512	1,748
Passengers on trains:				
(a) In train accidents*				
Killed	4	12	36	17
Injured	215	226	1,100	1,089
(b) In train-service accidents				
Killed	8	..	51	12
Injured	199	117	1,942	1,590
Travelers not on trains:				
Killed	1	..	16	6
Injured	88	82	779	788
Employees on duty:				
Killed	78	77	845	669
Injured	3,374	2,290	31,276	22,870
All other nontrespassers:**				
Killed	208	228	1,961	1,907
Injured	675	762	6,098	6,095
Total—All classes of persons:				
Killed	420	477	4,809	4,616
Injured	4,668	3,619	42,707	34,180

* Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former cause damage of more than $150 to railway property.

** Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and nontrespassers,* were as follows:

Persons:				
Killed	188	210	1,776	1,726
Injured	437	578	4,109	4,281

McNutt Blocks Hearing on Roads' Negro Employment Policy

Manpower Commission Chairman Paul V. McNutt informed his press conference on January 11 that at his direction the hearing scheduled for January 25 and succeeding days by the Fair Employment Practices Committee has been called off. This hearing had previously been postponed from December 7, as reported in *Railway Age* of December 5, page 937.

Extensive preparations had been made for this investigation of complaints of discrimination shown toward Negro workers, particularly those directed against railroads in the South, which, it was alleged, had individually or in collusion with labor unions refused equal opportunities to Negro employees, such as permitting them to work on Diesel-electric locomotives.

Henry Epstein, former solicitor general of the state of New York, had been employed to conduct the hearings, and a staff working out of Atlanta, Ga., had been engaged in gathering material for use as evidence.

Mr. McNutt gave no specific reason for his action, but called attention to the plans in progress in which his office and other government agencies are working with railroad and labor representatives to relieve shortages of railroad labor in localities where they are most pronounced.

Fiscal '44 Budget Goes to Congress

(*Continued from page 220*)

Board as having no effect in the law."

The Board can, of course, go before the Congressional appropriation committees and undertake to get a fiscal 1944 appropriation. If such a move were unsuccessful, the current appropriation would have to be stretched for 15 months beyond the end of the fiscal year; for the Board's life has been extended by executive order of the President to September 18, 1944.

The total 1944 estimate for the I. C. C. is $9,481,000, which is $23,192 less than the $9,504,192 appropriated for the current fiscal year ending June 30, 1943. Increases totaling $114,950 in estimates for the commission's work in connection with employee safety appliances, signal and train-control devices, locomotive inspections, and car service, were more than offset by the $138,142 cut in estimates for other work.

The breakdown of the I. C. C. estimate and the increases or decreases as compared with the fiscal 1943 appropriation is as follows: General administrative expenses, $2,852,000, decrease of $46,528; regulating accounts, $795,000, decrease of $40,247; safety of employees, $520,000, increase of $9,045; signal safety systems, $155,000, increase of $21,220; locomotive inspection, $493,000, increase of $18,000; valuation of property of carriers, $649,000, decrease of $927; motor transport regulation, $3,545,000, decrease of $20,240; printing and binding, $173,000, decrease of $30,200; emergency car service work, $299,000, increase of $66,685.

The estimate for the Railroad Retirement Board's administrative expenses under the Railroad Retirement Act totals $2,554,000, a decrease of $487,000 under the appropriations for fiscal 1943. The estimate is built up as follows: Salaries, $2,030,000, decrease of $348,000; expenses other than salaries and printing and binding, $490,000, decrease of $135,000; printing and binding, $34,000, decrease of $4,000. The estimate for the fiscal 1944 appropriation to the Railroad Retirement Account is $262,720,000, which compares with fiscal 1943's $214,801,000. For the administration of the Railroad Unemployment Insurance Act, the Board gets 10 per cent of the taxes collected thereunder; and this is estimated at $11,300,000 for fiscal 1944 as compared with a fiscal 1943 appropriation of $10,200,000.

With respect to the Retirement Board estimates, the explanatory statement accompanying the Budget has this to say: "Currently and through 1944, it is anticipated that the number of retirements of railroad workers will decline because of the pressing need on the part of the railroads for workers of all types and ages. The number of new beneficiaries resulting from deaths will continue to rise. As of September, 1942, the Board is paying more than $10,500,000 every month to over 158,000 aged or disabled workers, or the survivors of deceased workers. Because of the tremendous expansion in railroad operations, activities in the field of unemployment insurance are at a relatively low ebb. Benefits in this field are running at one-third of the 1942 levels and it is anticipated that in 1944 they will be even less. . . . Employment services have expanded rapidly during the past year and will continue to expand during 1944."

The estimate for the National Mediation Board totals $440,000, including $235,500 for the National Railroad Adjustment Board. Fiscal 1943 appropriations total $412,915, including $222,560 for the Adjustment Board. The $27,085 increase, the explanatory statement says, results from "the necessity of providing one additional mediator to insure prompt mediation of disputes and additional funds for expenses of referees." N. M. B. gets quite a write-up in the explanatory statement, which also says: "Since the enactment of the legislation to establish this agency, with but few exceptions, both the railroads and the air lines have been free from strikes and threatened strikes growing out of differences between employers and employees."

Included in the estimates covering civil functions of the War Department is a $35,700,000 item for maintenance of existing river and harbor works. The fiscal year 1943 appropriations for that work totaled $36,823,500, exclusive of $29,979,000 for improvements to existing rivers and harbors works carried under the general public works program. No improvement funds are included in the 1944 budget, it being explained that "general curtailment of construction work not essential to the prosecution of the war eliminates the need in 1944 of all but $3,200,000, and this amount has been made available through economies effected by the Department in the expenditure of appropriations of prior years." Meanwhile the $35,700,000 maintenance item "is the minimum considered necessary to maintain and operate those waterways of importance to the war effort."

With Public Roads Administration activities "devoted exclusively to highways necessary to effective prosecution of the war," the budget includes estimates of $75,000,000 for access roads, $10,000,000 for the "strategic highway network," and $5,000,000 for surveys for the Inter-American highway. There is, however, an estimate of $3,000,000 for "advance engineering surveys for future development of the strategic network of highways and bypasses around and extension into and through municipal areas, in accordance with the provisions of section 9 of the Defense Highway Act of 1941." All of these items total $93,000,000, an increase of $88,000,000 over fiscal 1943 appropriations which included only one comparable item—$5,000,000 for flight strips.

Also included is an estimate of $40,000,000 for the federal-aid highway system, which compares with a fiscal 1943 appropriation of $60,000,000. No estimates are included for federal-aid secondary or feeder roads or the elimination of grade crossings which got fiscal 1943 appropriations of $6,000,000 and $16,700,000 respectively.

Long Island's Burden of Property Taxes Prevents Improvements

One of the heavy burdens because of which the Long Island cannot be self-supporting is excessive property taxes which, in 1940, amounted to $2,889,396, according to the latest installment in the public presentation of the findings of the J. G. White Engineering Corporation. High taxes result in part from the railroad's being taxed on the whole cost of certain grade-crossing elimination structures, which projects add nothing to revenue and are undertaken for the benefit and safety of the public using the highways. Up to December 31, 1941, the Long Island spent $39,428,496 as its share of the cost of grade-crossing elimination projects with state and local authorities spending additional large amounts on the same projects. Yet the railroad pays taxes on the entire cost of many of the structures.

Although property taxes in 1940 constituted 73 per cent of the railroad's total tax bill, and, in Nassau county alone, property taxes rose more than 501 per cent from 1922 to 1940, the Long Island's commutation fares remain at the same level as in 1918. This situation has reached a point, the White report states, where the Long Island's taxes average nearly $11,000 a mile, far in excess of those paid by other railroads in the territory. Total taxes are now over 2½ times, or 158 per cent, greater than in 1921. Fifteen cents out of every dollar of operating revenue goes for taxes.

If the railroad were permitted to spend in improvements the large sums it must pay in property taxes, the over-all benefits to the cities and villages of the region would far outweigh the benefits now received from the high taxation, the railroad states, pointing out that one year's property taxes would electrify the Oyster Bay branch.

Withdrawal of Rate Rise Would Be Blow to D. L. & W. Says White

The withdrawal of freight and passenger rates allowed by the Interstate Commerce Commission last year would be a severe financial blow to his company, William White, president of the Delaware, Lackawanna & Western, asserted in an address before the Wyoming Valley Traffic Club at Scranton, Pa., at its January meeting. Hearings on the proposal of the OPA to rescind increases granted in 1942 will begin on February 2.

"In the first eleven months of 1942," said Mr. White, "the additional revenue accruing to the Lackawanna from increased freight and passenger rates amounted to $2,600,000, while the cost of increased wages and vacations granted in December, 1941, was $3,500,000. Thus the additional

revenue accruing from increased charges was $900,000 less than the last wage increase. The Lackawanna, in 1942, had a net income of slightly less than $5,000,000; and the cost of new wage increases, either requested or about to be requested, to the Lackawanna, will be in the neighborhood of $8,000,000 per year. The result of such major operations on the finances of the Lackawanna need not be spelled out—it is apparent.

"The Lackawanna's net income for 1941 was only $3,600,000; and in 1942 will be only about $5,000,000. Such modest earnings as we have had have been devoted to decreasing our debt and improving the property. We have a heavy tax liability ahead of us; and there is no dividend in prospect for the stockholders, who have had no dividends since 1930.

"A majority of the railroads are in a similar situation; and were any substantial increases in wages granted, and the increased charges to be taken away from them, the earnings resulting from abnormal war traffic would entirely disappear, and the stockholder would continue to be the forgotten man."

L. & N. E. Gets U. S. Treasury Award for War Bond Purchases

The Lehigh & New England announced recently that through the efforts of the war savings bond committee of that company, headed by C. A. Andrews, comptroller of the road, its employees had gone over the top in the purchase of war bonds under the 10 per cent payroll savings plan and had received a certificate of award from the U. S. Treasury Department. The Lehigh & New England is the third road to have received this distinction, the Boston & Maine and the Mississippi Central having previously attained it.

S. P. Motor Applications Approved

Two reports giving conditional approval to applications of Southern Pacific motor-carrier affiliates have been issued by the Interstate Commerce Commission. In No. MC-F-1880, the commission's Division 4 has authorized the purchase by Pacific Truck Express of operating rights and property of two truck lines, and the merger of Pacific Truck's operating rights and property into Pacific Motor Trucking Company; while in No. MC-30319 (Sub-No. 7), Division 5 has granted the Southern Pacific Transport Company certificates covering common-carrier trucking operations over 17 Texas routes.

The trucking companies to be acquired by Pacific Truck are the Barker Freight Lines of Corvallis, Ore., and the Klamath Falls-Malin Freight Line of Klamath Falls, Ore. The merger of Pacific Truck into P. M. T. is expected to result "in a more efficient transportation system particularly in the use of equipment and facilities of Pacific Motor and the railroad." Among the conditions attached to the commission's approval of the transactions are those requiring the write-off over a 10-year period of any resultant increase in the "Other Intangible Property" account of either Pacific Truck or Pacific Motor (when the merger is consummated).

The certificate granted to Southern Pacific Transport Company in the other proceeding is subject to the usual conditions designed to insure that the highway operations shall remain auxiliary to rail services of the Texas & New Orleans. Meanwhile, the commission did adhere to the rule of *Kansas City S. Transport Co. Inc., Com. Car Application,* 28 M. C. C. 5, thus rejecting protestant motor carrier contentions to the effect that the application should be denied and the railroad left to effect co-ordinated operations through arrangements with them.

Victorian Railways Accruing Reserved for Depreciation

The government-owned Victorian railways (Australia) in its annual report for the year ended June 30, 1942, states that improved finances have enabled them to make financial provision for making up all arrears in depreciation which have accrued since July 1, 1937. Unfortunately, because of war conditions, increased improvement work cannot be undertaken at this time. It is, however, important that these funds be available when needed, since depreciation of equipment, tracks and shop plant and equipment is much greater under present war conditions than would normally prevail.

Gas rationing and the "freezing" of motor accessories had some restrictive influence on highway competition, the report states, but up until about the middle of the year practically all long-distance highway traffic, passenger and freight, remained in existence. Subsequently, however, all such services as were deemed to be a non-essential duplication of other facilities were prohibited.

The report calls attention to the probability of important post-war developments in commercial aviation. It recommends that legislative action be taken to prevent the chaotic conditions which prevailed during the early growth of motor transport and to make certain that this development will conform to an orderly and economic plan—based upon its usefulness to the community rather than upon individual opportunism.

"Book-Larnin" for Yardmasters

While he acted "with some hesitation" lest he be suspected "of being in the long-haired professor class, and esteeming 'book-larnin' as against practical experience," E. W. Coughlin, assistant to the chairman of the Car Service Division, Association of American Railroads, has nevertheless taken the risk, sending to district managers and car service agents a list of articles, books and other publications dealing with yard and terminal operation. Mr. Coughlin suggested that the "reading guide" be passed along to younger men now coming into supervisory positions in yards and terminals—so that they may profit by the experience and opinion of writers, who were also practical railroaders.

"The book by John A. Droege, 'Freight Terminals and Trains'," Mr. Coughlin says, "is particularly recommended, even though it is of rather early vintage. Several references will be found to articles in various 1914-1915 issues of the Railway Age Gazette, predecessor to the present *Railway Age.* This periodical at that time ran contests for papers on practical phases of yard operation. A review of them in public libraries should be worthwhile to the younger men.

"Preclassification or blocking of trains, permitting so-called 'maintracking' is of particular interest now, when many termini in localized areas are overburdened. The pioneering of the B. & O. in this direction is well covered in Droege's book; the subject was again most active in 1927-1929. Fertig's article in the February 19, 1927, issue of *Railway Age* is well worth anyone's careful perusal."

The list was excerpted from a considerably longer bibliography prepared recently by the Bureau of Railway Economics Library. In closing Mr. Coughlin suggested that it is "too bad that some of us cannot spend a sabbatical year collecting, sifting and distributing the more worthwhile of these published items to our road forces."

Supply Trade

John S. Morris has been appointed methods engineer for the **By-Products Steel Corporation,** a subsidiary of the Lukens Steel Company, Coatesville, Pa.

Raymond M. Dennis has been appointed assistant to the president of the **By-Products Steel Corporation,** a subsidiary of the Lukens Steel Company, Coatesville, Pa. Mr. Dennis had been general manager of the flanging department of Lukens.

James W. Harley, general traffic manager of the **United States Rubber Company,** has been appointed director of traffic for all plants of the company, to succeed **George F. Hichborn,** who has been with the company for 36 years and will continue in an advisory capacity.

Robert H. Gibb, for the past several years a member of the Pittsburgh, Pa., district sales organization of the **Allegheny Ludlum Steel Corporation,** and recently assistant district manager, has been promoted to district manager of that office.

Charles A. Johnson, credit manager in the New York district of the **American Steel & Wire Co.,** U. S. Steel subsidiary, has been appointed assistant treasurer, to succeed **Robert Gordon,** who has retired after almost 44 years of service in the New York office.

Presentation of the Army-Navy "E" production award to the Freeport, Ill., plant of **Fairbanks, Morse & Co.,** Chicago, was made on January 13. Presentation of the award to the Beloit, Wis., plant will be made on January 18 and to the Three Rivers, Mich., plant on January 21.

Samuel Berman, electrical test engineer of the New York independent subway sys-

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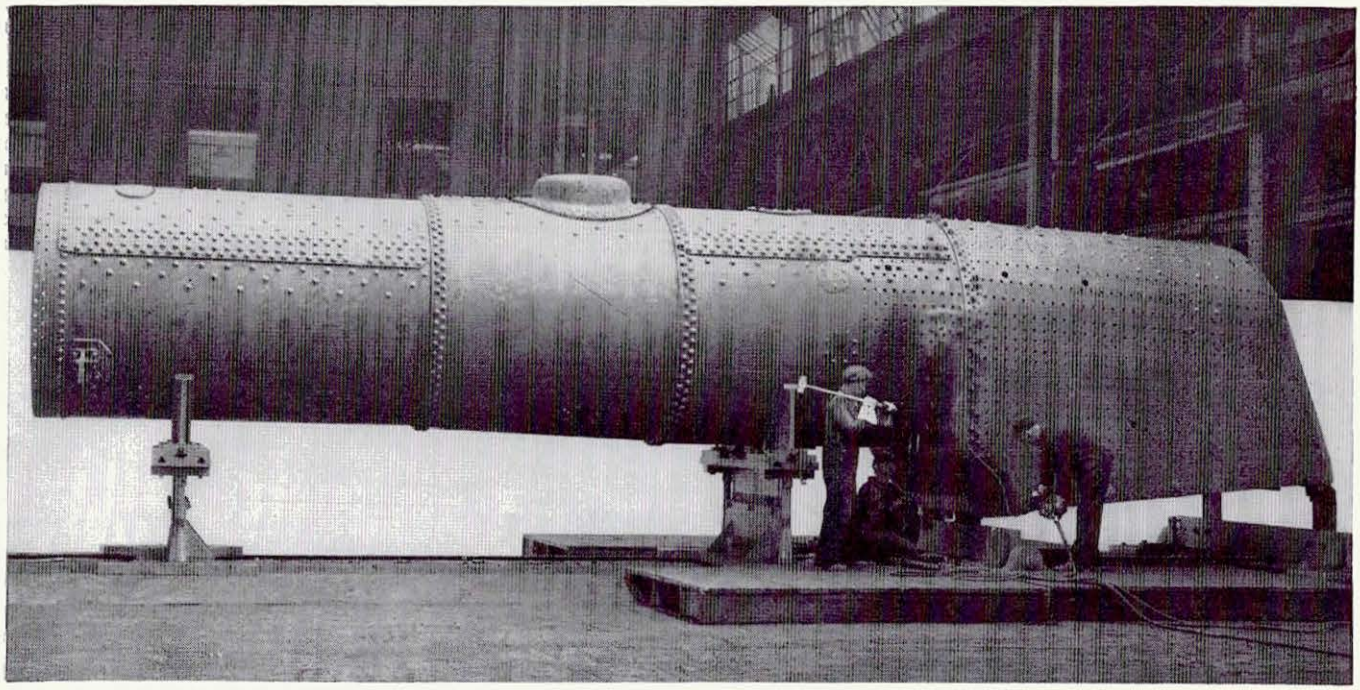

Through the use of this boiler jig perfect alignment between boiler shell and back end is assured. It is through such methods as this that Lima has earned its enviable reputation as a builder of low-maintenance steam power

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Those locomotives are most valuable that keep out of the shop.

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LIMA LOCOMOTIVE WORKS — LIMA LOCOMOTIVE WORKS INCORPORATED — INCORPORATED, LIMA, OHIO

tem and inventor of the Berman Metal Locator, has joined the **Waugh Laboratories,** a division of the Waugh Equipment Company, where he will specialize on electronic work. Mr. Berman drew national attention when his invention, an electro-magnetic foreign body finder, helped to save many of the lives of men wounded at Pearl Harbor by promptly locating shell and bomb fragments so that they could be removed. The Locator is now in production at the Waugh Laboratories.

The Army-Navy "E" award was presented to the Hammond, Ind., plant of the **Pullman-Standard Car Manufacturing Company** on January 15 by Brig. Gen. John K. Christmas of the Tank Automotive Center at Detroit, Mich. C. A. Liddle, president of Pullman-Standard, accepted on behalf of the plant and the employees. The ceremonies were held in one of the company's factory buildings, the approach to which consisted of an avenue of tanks drawn up to inspection line on both sides. The rostrum was studded by a semicircle of trench mortars.

OBITUARY

John S. Y. Fralich, district engineer for the Westinghouse Air Brake Company, with headquarters at Chicago, died January 5. Mr. Fralich served his apprenticeship in the Pennsylvania's shops at Altoona, Pa., and was employed there for two years as a machinist. He entered the employ of the Westinghouse Air Brake Company as a machinist in 1904, and subsequently became supervisor of shop tests under direction of the engineering department. For many years he assisted in the development, testing and road service trials of new air brake apparatus while associated with the experimental division of the

John S. Y. Fralich

engineering department and as assistant to the mechanical engineer. He was transferred to the Chicago office in 1913, and appointed assistant resident engineer. He was promoted to district engineer in 1919. Mr. Fralich was a member of the Central Air Brake Club, the Western Railway Club, and the American Society of Mechanical Engineers.

Construction

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—This road has applied to the Interstate Commerce Commission for authority to construct a new seven-mile line from a point about three miles north of Granger, Iowa, to a connection with its main line running from Chicago to Council Bluffs, Iowa. The connection would be a substitute for a 4.2 mile line in the vicinity of Madrid, Iowa, which the applicant proposes to abandon, because the rehabilitation of a bridge thereon would cost more than the $244,695 which the new line (laid with second-hand rail) is expected to cost, after deducting the amount realized from salvage of the old.

CHICAGO, ROCK ISLAND & PACIFIC and CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—A contract amounting to approximately $500,000 has been awarded the Massman Construction Company, Kansas City, Mo., for the construction of three pneumatic caisson piers, one reinforced concrete pier on piling and the east abutment of the new joint Missouri River bridge east of Kansas City. This is in addition to a $300,000 contract for the construction of the remainder of the substructure awarded the same company, as reported in the *Railway Age* of November 21, 1942, page 863.

KANSAS CITY TERMINAL.—Division 4 of the Interstate Commerce Commission has extended from December 31, 1942, to December 31, 1944, the time within which this company shall complete construction of a line in Jackson County, Mo., authorized by the commission in Finance Docket 8480.

NEW YORK CENTRAL.—The New York State Public Service Commission has ordered certain changes in a previously ordered plan for the elimination of the New York Central's crossing at Main street in the village of Middleport, Nagara county. The plan previously provided for a three-span bridge over the depressed highway with curb columns. Under changes recommended by the state department of public works and approved by the commission, the curb columns will be omitted and a single-span bridge erected over the depressed highway. The width of pavement between curbs will be 34 ft. throughout the length of the project instead of 32 ft. as provided in the original plan, and the slopes on the southerly approach will be flattened and protected from erosion by the use of sod strips and seeding. Total cost of the project is estimated at $284,200.

NEW YORK, CHICAGO & ST. LOUIS.—A contract has been awarded the Roberts & Schaefer Co., Chicago, for the construction of a two-track N. & W. type cinder plant at Bellevue, Ohio.

PENNSYLVANIA.—A contract has been awarded the Minton Construction Company, Cleveland, Ohio, for the rearrangement of the facilities of the Producers Co-Operative Commission Association at Columbus, Ohio, necessitated by yard improvements at Columbus, which will be undertaken in the near future.

PENNSYLVANIA.—The New York State Public Service Commission has amended a previous order relative to the elimination of the Pennsylvania's grade crossings at Sayre and Chemung streets in the village of Horseheads, Chemung county. Under the changes provided in the order, the Chemung and Sayre street crossings will be closed and an overhead structure erected substantially in accordance with a plan prepared by the state department of public works. Consideration was also given to proposed changes in the plan for the elimination of the North Main street crossing, but the chief engineer of the public service commission, who held hearings in a proceeding involving all of the crossings in Horseheads, recommended that the changes requested be held in abeyance for the present.

UNION PACIFIC.—A contract has been awarded the Fred T. Wyatt Construction Company, Kansas City, Mo., for renewing the concrete floor in a roundhouse at Kansas City, Kan. This work will cost about $26,000. A similar contract has also been awarded Jack Evers, Green River, Wyo., for renewing 26,000 ft. of concrete paving in the roundhouse at Green River.

UNION PACIFIC.—A contract has been awarded the Stearns-Roger Manufacturing Company, Denver, Colo., for installing a second-hand boiler in the power house at Green River, Wyo.

UNION PACIFIC.—A contract has been awarded the Gilpin Construction Company, Portland, Ore., for renewing the main lifting cables for the upper deck and the lifting cables in the end panels for the lower deck of a double deck vertical lift span over the Williamette river. The cables will be furnished by J. A. Roebling's Sons, Trenton, N. J. The cost of this work will be approximately $90,000.

WAR DEPARTMENT.—The U. S. Engineer office, Fort Sam Houston, Tex., has awarded a contract amounting to more than $100,000 and less than $500,000 to Martin & Grace, Dallas, Tex., for the construction of a spur track, yard and switching facilities in Texas. The U. S. Engineer office, Fort Sam Houston, has also awarded a contract amounting to less than $50,000 to D. Ward, San Antonio, and the William A. Smith Construction Company, Inc., Houston, Tex., for the construction of additional trackage in Texas. The U. S. Engineer office, Jacksonville, Fla., has awarded a contract amounting to more than $50,000 and less than $100,000 to B. B. McCormick & Sons, and the Okeechobee Construction Company, Jacksonville, Fla., for the construction of a spur track in Florida. The U. S. Engineer office, Salt Lake City, Utah, has awarded a contract amounting to less than $60,000 to W. C. Smith, Inc., Portland, Ore., for the construction of a railroad transfer shed in Utah. The U. S. Engineer office, San Bernardino, Cal., has awarded a contract amounting to less than $50,000 to Clifford

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HELP

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Some railroads with thousands of grease lubricators in service have recently been ordering perforated plates by two's and four's.

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C. Bong & Co., Arcadia, Cal., for the construction of a railroad spur in Nevada. The U. S. Engineer office, Albuquerque, N. M., has awarded a contract amounting to less than $50,000 to J. E. Morgan & Sons, El Paso, Tex., for the construction of a lavatory and locomotive shelter with utilities and a railroad track in Texas.

Abandonments

CHICAGO, BURLINGTON & QUINCY.—As a result of a petition for reconsideration, the Interstate Commerce Commission by Commissioner Porter has extended for 30 days the effective date of the certificate issued December 5, 1942, authorizing this company to abandon its line from Alma, Neb., to Huntley, 9.77 miles.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—Division 4 of the Interstate Commerce Commission has authorized this company to abandon its branch line from Otis, Wis., to Doering, 16.8 miles.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—This road has applied to the Interstate Commerce Commission for authority to abandon a line extending from a point 1.16 miles south of Madrid, Iowa, southerly for a distance of 4.2 miles. The applicant proposes to build an alternate line for less than it would cost to rehabilitate a bridge on the abandoned line.

PENNSYLVANIA.—Authority has been granted this company by Division 4 of the Interstate Commerce Commission to abandon three branch lines and portions of three other branch lines in the state of Pennsylvania, all built to serve coal mines. The lines affected are the Amesville branch No. 3, 0.86 mile; the Liveright branch, 0.53 mile; the Bute Run branch, 2.45 miles; a 0.75-mile segment at the end of the Amesville No. 1 branch; the portion of the Dundale branch between Allsworth and Dundale, 0.76 mile; and a 1.58-mile segment at the end of the Philipsburg branch.

PIONEER & FAYETTE.—Abandonment of this company's line from Pioneer, Ohio, to Fayette, about 13 miles, has been authorized by Division 4 of the Interstate Commerce Commission.

UNION PACIFIC.—In a proposed report in Finance Docket 13799 Examiner Jerome K. Lyle has recommended that the Interstate Commerce Commission authorize this company to abandon part of a branch line from Galeton, Colo., to Purcell, about 9 miles, but deny its application in the same proceeding for authority to abandon part of a branch line from Barnesville, Colo., to Briggsdale, about 13 miles. The examiner proposes that, in the latter case, certain economies in operation be effected, such as closing an agency station and experimenting with an "on call" service involving overtime work by a switching crew to replace a regular road crew assignment.

Financial

ATCHISON, TOPEKA & SANTA FE.—*Recapitalization of Motor Carrier Subsidiaries.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to receive and hold, but not to sell, and its wholly-owned motor carrier subsidiaries, the Santa Fe Trail Transportation Company and the Santa Fe Transportation Company, have been authorized to issue, certain stocks and notes for the purpose of capitalizing open account indebtedness and effecting savings under excess profit tax regulations.

The first named motor carrier is authorized to issue common stock with a par value of $2,200,000 in exchange for outstanding capital stock and in payment of open account indebtedness, as well as a 10-year note in the amount of $1,980,000, bearing interest at 3 per cent payable if earned, on which are required payments on the principal amounting annually to 10 per cent of the face value.

The second named subsidiary is authorized to issue additional common stock with a par value of $739,000, as well as a 10-year note in the amount of $559,000, bearing interest at 3 per cent payable if earned, on which it is required to make payments on the principal of 10 per cent of the face value per year.

BOSTON & MAINE.—*Substitution of Collateral.*—In its third supplemental report in Finance Docket 12841 the Interstate Commerce Commission's division 4 has authorized this company to withdraw from collateral deposited with the Reconstruction Finance Corporation as security for its 1940 loan of $40,193,000 first mortgage bonds of the North Station Hotel Building, Inc., in the amount of $297,000, substituting therefor B. & M. first mortgage 4 per cent series RR bonds having a market value of $297,000. The North Station bonds involved are to be pledged as security for a bank loan and then, as released by quarterly payments, retired and cancelled.

CHICAGO, BURLINGTON & QUINCY.—*Burlington Transportation Co. Notes.*—Departing from the recommendation of the examiner, Division 4 of the Interstate Commerce Commission has authorized this company to receive and hold, but not to sell, and its highway subsidiary, the Burlington Transportation Co., controlled by ownership of all its capital stock, to issue 2 promissory notes in the total amount of $1,869,940 by which outstanding open account indebtedness will be funded. The order provides that these notes bear interest at 3 per cent, payable if earned, and requires periodic payments on the principal amounting to 5 per cent of the face value annually. The transaction will permit savings under excess profit tax regulations.

DELAWARE, LACKAWANNA & WESTERN.—*Rental Payment Restrained.*—The United States district court at New York on December 30, 1942, as a result of an action brought by the government to collect income taxes assessed against the Morris & Essex, issued an order restraining the Delaware, Lackawanna & Western from paying to the M. & E. the rental due on January 2 under terms of the lease between the two companies.

FORT DODGE, DES MOINES & SOUTHERN. —*Reorganization Plan Operative.*— Division 4 of the Interstate Commerce Commission has authorized the Fort Dodge, Des Moines & Southern Railway to acquire and operate the property of the Fort Dodge, Des Moines & Southern Railroad, debtor, and to issue certain securities, so making effective a plan of reorganization approved by the commission and the federal court (see *Railway Age* of March 29, 1941, page 594). Capitalization of the new Company is to consist of 141,250 shares of common stock of $10 par value, which is to be placed in a voting trust for a three-year period, and $2,260,000 of 4 per cent income bonds, series B. Fixed charges are eliminated in this plan of capitalization.

MISSOURI PACIFIC. — *Acquisition.* — Division 4 of the Interstate Commerce Commission has authorized this road's subsidiary, the Missouri Pacific in Nebraska, to purchase and operate a 1.5-mile line within the corporate limits of Hastings, Neb., part of a branch of the Chicago & North Western which the commission has authorized that road to abandon.

NEW YORK, SUSQUEHANNA & WESTERN. —*Reorganization.*—A hearing on the plan of three insurance companies for reorganization of this company (see *Railway Age* of November 21, 1942, page 864) will be held before Examiner R. T. Boyden of the Interstate Commerce Commission in Brooklyn, N. Y., on February 23.

SEABOARD AIR LINE.—*Bond Purchase Plan Extended.*—The United States district court on December 31, 1942, extended to January 31 the time within which the railroad may purchase Seaboard-All Florida first mortgage 6 per cent bonds, series A and B, matured August 1, 1935, at a flat price of $160 for each $1,000 bond. (Previous item in *Railway Age* of November 28, 1942, page 905.)

SEABOARD AIR LINE.—*Sale of Controlled Line.*—The mortgaged property of the Jacksonville, Gainesville & Gulf, which is controlled by the Seaboard Air Line, will be offered for sale at a pubic auction on February 1 under a final decree of foreclosure and sale entered December 29 by the United States district court at Jacksonville, Fla. The order resulted from an action by the Maryland Trust Company and William J. Casey, trustees of the series A first mortgage 6 per cent bonds. The entire line and all assets of the railroad will be first offered for sale and then the property divided into three parcels.

Average Price of Stocks and Bonds

	Jan. 12	Last week	Last year
Average price of 20 representative railway stocks..	29.40	29.31	28.99
Average price of 20 representative railway bonds..	70.08	68.99	65.74

News Department continued on next left-hand page

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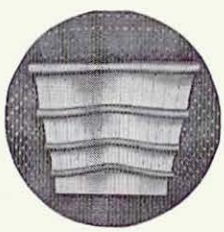

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Railway Officers

EXECUTIVE

Louis Dulien has been elected president of the Tonopah & Goldfield, with headquarters at Seattle, Wash.

G. H. Sido, vice-president and general manager of the Wabash and vice-president of the Ann Arbor, has also been appointed general manager of the latter road.

Benjamin F. Parsons, whose promotion to vice-president and secretary of the Chicago Great Western was reported in the *Railway Age* of January 9, was born at National City, Cal., in 1881. He entered railroad service on January 1, 1901, as a stenographer in the traffic department of the Chicago & Alton (now the Alton) at Jacksonville, Ill. In July, 1902, he was transferred to Marshall, Mo., and, a few months later, to Chicago, where, in January, 1906, he became a tariff clerk, going to the Chicago Great Western in the same capacity on April 16, 1910, at Chicago. On September 1 of the same year he was promoted to chief clerk in the general freight office, becoming assistant general freight agent in 1917. On April 15, 1924, Mr. Parsons was advanced to general freight agent, holding that position until he was promoted to traffic manager on March 1, 1932. During reorganization of the C. G. W., he was appointed assistant to the trustees and when the reorganization was completed on February 19, 1941, he became secretary and assistant to the president.

FINANCIAL, LEGAL AND ACCOUNTING

Carleton S. Hadley, general counsel of the Wabash, has also been appointed general counsel of the Ann Arbor.

J. G. White, has been elected secretary and treasurer of the Tonopah & Goldfield with headquarters at Seattle, Wash.

J. L. Goehring has been appointed secretary of the Fairport, Painesville & Eastern with headquarters at Painesville, Ohio.

D. C. Richardson, district freight claim agent of the New York Central (Big Four) at Cincinnati, Ohio, has been promoted to freight claim agent, with headquarters at Indianapolis, Ind., succeeding **J. K. Vance,** who has retired, as reported in the *Railway Age* of December 12.

G. M. Quinlan, chief clerk of the freight claim department of the Erie at Cleveland, Ohio, has been promoted to assistant freight claim agent, with the same headquarters, succeeding **T. P. Scott,** whose promotion to freight claim agent was reported in the *Railway Age* of January 9.

William Barrett Pope, assistant treasurer of the Seaboard Air Line at Portsmouth, Va., has been appointed treasurer for the receivers, with headquarters at Norfolk, Va., and **Elder Lee Lash, Jr.,** chief clerk to the treasurer at Norfolk, has been advanced to succeed Mr. Pope as assistant treasurer at Portsmouth. Mr. Pope was born on October 21, 1898, at Belleview, Fla., and was graduated from the Georgia School of Technology Evening School of Commerce in 1927, and in 1929 became a Certified Public Accountant. He entered railroad service on March 1, 1920, as an employee of the Seaboard Air Line, and on July 1, 1921, was promoted to division paymaster at Atlanta, Ga., and to assistant cashier at Portsmouth on October 1, 1930. On December 16, 1935, Mr. Pope became chief clerk to the treasurer at Norfolk, being promoted to assistant treasurer at Portsmouth on July 1, 1941, which position he held until his recent promotion.

OPERATING

G. F. Prie, Jr., supervisor of explosives of the New York zone of the Pennsylvania, has been appointed assistant freight trainmaster of the Long Island.

Jesse Bethurem, supervisor of freight schedules of the Atchison, Topeka & Santa Fe at Chicago, has been promoted to assistant to the general superintendent of transportation, with the same headquarters.

J. E. Halter, assistant to the general manager of the Missouri & Arkansas, with headquarters at Harrison, Ark., has been granted leave of absence for military service.

W. J. Pescud, assistant superintendent of the Canadian Pacific, at Nelson, B. C., has been transferred to Calgary, Alta., relieving **T. R. Alexander** who, in turn, has been transferred to Nelson.

R. E. Brooks, superintendent of the Butte, Anaconda & Pacific, has been appointed general manager, with headquarters as before at Anaconda, Mont., succeeding **H. A. Gallwey,** whose death is reported elsewhere in these columns.

Archie Moses, assistant trainmaster-assistant road foreman of engines of the Conemaugh division of the Pennsylvania, has been appointed assistant road foreman of engines of the Pittsburgh division. **B. A. Doran,** assistant trainmaster- assistant road foreman of engines of the Renovo division, has been transferred to the Conemaugh division.

W. H. Bailey, acting superintendent of the Eastern division of the Missouri Pacific, has been promoted to superintendent of that division, with headquarters as before at Kansas City, Mo. **E. H. Campbell,** acting superintendent of the Kansas City Terminal division, has been advanced to superintendent of that division, with headquarters as before at Kansas City.

Charles Weber, assistant trainmaster of the Indianapolis division of the Pennsylvania, has been appointed assistant freight trainmaster of the New York division; **C. R. Boyd,** station master at Pittsburgh, has been appointed assistant trainmaster of the Pittsburgh division, and **P. A. Porter,** yardmaster of the Eastern division, has been appointed assistant trainmaster of that division.

F. J. Fryer, assistant superintendent of the Canadian Pacific at Edmonton, Alta., has been promoted to inspector of transportation of the Western lines with headquarters at Winnipeg, Man. **C. F. Gwyn,** assistant superintendent at Minnedosa, Man., has been transferred to Edmonton, succeeding Mr. Fryer. **Thomas Hope,** assistant superintendent in charge of the Winnipeg terminal, replaces Mr. Gwyn at Minnedosa and is replaced at Winnipeg by **W. M. Russell,** assistant superintendent at Moose Jaw. **F. J. Malone,** conductor at Sutherland, Sask., has been promoted to assistant superintendent with headquarters at Moose Jaw, succeeding Mr. Russell.

TRAFFIC

C. W. Edwards, chief clerk of the passenger traffic department of the Chicago Great Western at Chicago, has been promoted to assistant general passenger agent, with the same headquarters.

Guy H. Dougherty, assistant Southern District traffic manager of the Kansas City Southern-Louisiana & Arkansas lines, with headquarters at Shreveport, La., has been transferred to Houston, Tex.

T. G. Kees, general eastern agent of the Chicago Great Western, has been appointed eastern traffic manager, with headquarters as before at New York. Mr. Kees will have jurisdiction over agencies at Boston, Mass., New York and Philadelphia, Pa.

E. E. Greeson has been appointed general agent of the Kansas City Southern-Louisiana & Arkansas lines at Little Rock, Ark., succeeding **Met J. Caldwell,** who has been appointed acting general agent at Tulsa, Okla., as reported in the *Railway Age* of December 19.

J. T. Garrigues, general agent of the Kansas City Southern-Louisiana & Arkansas lines at Fort Smith, Ark., has been transferred to Kansas City, Mo., succeeding **George H. Batchelor,** whose death on November 3 was reported in the *Railway Age* of November 14. **S. O. Grubbs,** general agent at Jackson, Miss., has been transferred to Fort Smith, relieving Mr. Garrigues.

G. H. Overberg, chief clerk to the passenger traffic manager of the Missouri-Kansas-Texas at St. Louis, Mo., has been promoted to the newly created position of assistant general passenger agent with the same headquarters. **W. P. Murphy,** chief clerk to the general passenger agent at Dallas, Tex., has been advanced to the newly created position of assistant general passenger agent at that point.

Floyd T. Ridley has been appointed district traffic manager of the Kansas City Southern-Louisiana & Arkansas lines with headquarters at Kansas City, Mo. He succeeds **Henry Dawes,** who is overseas as a captain in the military railway service of

News Department continued on next left-hand page

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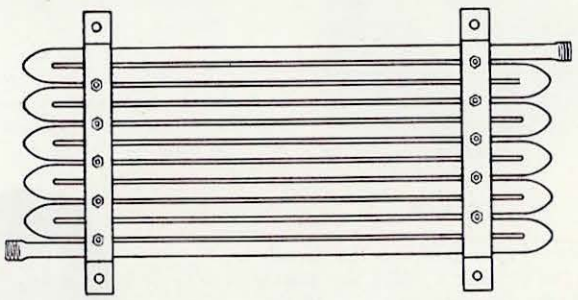
Steam tight under high pressures.

Made with Elesco machine-die-forged return bends, which provide close spacing of pipes and consequent maximum heating surface within a given space.



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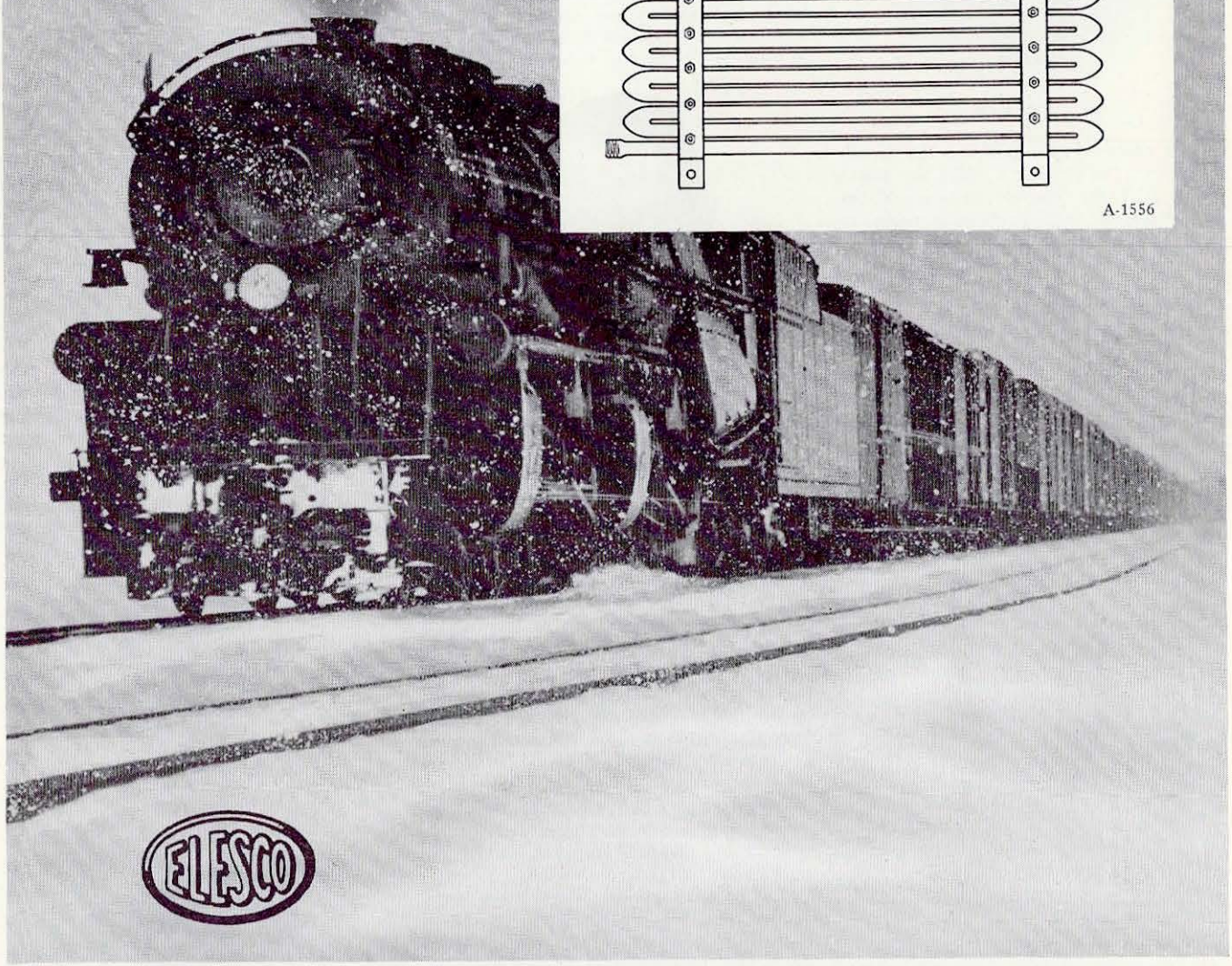

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the Army. Mr. Ridley was born at Dalton, Ga., on November 7, 1900, and entered railroad service on March 1, 1916, in the Dalton freight office of the Southern, holding various clerical positions with the Southern and with the Nashville, Chattanooga & St. Louis until February 1, 1924, when he became chief clerk in the division

Floyd T. Ridley

freight office of the Southern at Lynchburg, Va. On October 1, 1926, Mr. Ridley joined E. I. du Pont de Nemours & Co., at Wilmington, Del., as traffic manager, resigning to join the Kansas City Southern-Louisiana & Arkansas on January 15.

K. Miles Potter, whose appointment as general freight agent of the Long Island, with headquarters at Pennsylvania station, New York, was noted in the *Railway Age* of January 2, was born on June 12, 1906, at Philadelphia, Pa. Mr. Potter entered the service of the Pennsylvania on July 21, 1926, as a messenger in the Penn street freight station, and in April, 1927, he was transferred to the office of the general freight agent at Pittsburgh, Pa. After serv-

K. Miles Potter

ing in several capacities in the general offices, he was appointed freight representative in the office of the division freight agent at Pittsburgh, on August 1, 1933, and subsequently served as coal freight representative at Pittsburgh until February 1, 1937, when he was appointed chief clerk to the division freight agent at Cleveland, Ohio. On April 16, 1938, Mr. Potter was appointed district freight agent at Akron, Ohio, being promoted to division freight agent at Erie, Pa., on December 16, 1939, which position he was holding at the time of his recent appointment to general freight agent of the Long Island.

J. A. Prince, district freight agent of the Pennsylvania at Canton, Ohio, has been promoted to division freight agent with headquarters at Erie, Pa. **B. F. Isenberg,** district freight agent at Milwaukee, Wis., has been transferred to Canton, succeeding Mr. Prince, and **K. G. Crowl,** district freight agent at New Haven, Conn., was transferred to Milwaukee, relieving Mr. Isenberg.

Clark Maynard Groninger, whose appointment as coal traffic manager of the Baltimore & Ohio, with headquarters at Baltimore, Md., was announced in the *Railway Age* of January 9, was born on April 20, 1895, at Chillicothe, Ohio. Mr. Groninger entered railroad service on January 1, 1912, as stenographer of the Baltimore & Ohio at Chillicothe, being transferred to

Clark M. Groninger

Akron, Ohio, on February 4, 1915, and subsequently serving as soliciting freight agent at that point and chief clerk in the division freight office at Youngstown, Ohio. From June 24, 1918, to July 15, 1919, he served in the United States Army as a member of the 309th Engineers, and upon his return to the services of the Baltimore & Ohio on September 1, 1919, was appointed freight representative at Cleveland, Ohio. On March 1, 1920, Mr. Groninger was appointed district freight agent at Akron, later being transferred successively to Springfield, Ill., Garret, Ind., Newark, Ohio, and to Baltimore, Md. He was appointed assistant general freight agent at Cleveland on April 1, 1931, and on January 1, 1937, was advanced to general freight agent of the Baltimore & Ohio and of the Alton, with headquarters at St. Louis, Mo., in which position he remained until his recent promotion.

George Murray Campbell, whose promotion to general freight traffic manager of the Baltimore & Ohio, with headquarters at Baltimore, Md., succeeding **Omer S. Lewis,** retired, was announced in the *Railway Age* of January 9, was born on January 30, 1896, at Cincinnati, Ohio. Mr. Campbell, who took special courses at Johns Hopkins university, was graduated from Massachusetts State college in 1920, and in 1923 was graduated from La Salle Extension university, where he had been studying traffic management. Mr. Campbell en-

George M. Campbell

tered railroad service during his school vacation in 1914, as agent's helper of the Chicago, Burlington & Quincy at Mendon, Ill. During subsequent vacation periods, he was employed by the Pennsylvania as blacksmith's helper at Baltimore; trainman of the Erie at Port Jervis, N. Y., and timekeeper in the engineering department of the Baltimore & Ohio. In 1921, he entered the traffic department of the Baltimore & Ohio as tariff clerk in the general freight office at Baltimore, becoming rate clerk at that point in 1922. Subsequently he served as traffic representative in the district freight office at Baltimore; traveling industrial agent in the commercial development department at Pittsburgh, Pa.; district freight representative at Jacksonville, Fla.; district freight agent at Toledo, Ohio, and North-

Omer S. Lewis

western freight agent at Minneapolis, Minn. In 1933, he was appointed assistant general freight agent at Washington, D. C., and in 1937 became assistant coal traffic manager at Baltimore. Mr. Campbell was advanced to coal traffic manager at Baltimore in 1938, and retained that position until his

recent promotion to general freight traffic manager.

Mr. Lewis was born on March 8, 1873, at Lawrenceburg, Ind., and entered railroad service in 1890 as clerk in the audit office of the Kentucky Central (now Louisville & Nashville) at Covington, Ky. He subsequently served in that capacity for the Newport News & Mississippi Valley (now Chesapeake & Ohio) at Lexington, Ky.; the Chesapeake & Ohio at Richmond, Va., and the Ohio & Mississippi (now Baltimore & Ohio) at Cincinnati, Ohio. In 1896, he became agent of the Baltimore & Ohio at Lawrenceburg, Ind., and in February, 1903, was appointed chief clerk to the division freight agent at Vincennes, Ind., remaining in that capacity until November, 1903, when he was appointed chief claim clerk in the general freight office at Cincinnati. In 1912, Mr. Lewis went with the Cincinnati, Hamilton & Dayton (now Baltimore & Ohio) as division freight agent at Dayton, Ohio, and in 1913 became division freight agent of the Baltimore & Ohio, with headquarters at Cincinnati. Remaining with the B. & O., he became assistant general freight agent at Cincinnati in 1915, and in 1916 was promoted to general freight agent at Cincinnati, being transferred to Pittsburgh, Pa., in 1920. In 1921, Mr. Lewis became freight traffic manager at Baltimore, and in 1930 he was promoted to general freight traffic manager, the position he held at the time of his retirement.

J. H. A. Middlecoat, traffic representative of the Canadian National at Hong Kong, China, until that colony was overrun by the Japanese in December, 1941, has been appointed export and import representative in the foreign freight department of the Canadian National, with headquarters at Montreal, Que. Mr. Middlecoat returned to this continent on the Gripsholm in August, 1942, after being released from a Japanese concentration camp.

H. E. Pleasants, assistant general passenger agent of the Seaboard Air Line, has been appointed general passenger agent, with headquarters as before at Atlanta, Ga. The position of assistant general passenger agent at Atlanta has been abolished. **C. G. Ward,** division passenger agent, has been appointed assistant general passenger agent, with headquarters as before at Raleigh, N. C., and **J. R. Bradley, Jr.,** division passenger agent, has been appointed assistant general passenger agent, with headquarters as before at Jacksonville, Fla. The positions of division passenger agent at Raleigh and at Jacksonville have been abolished. **J. L. Carter,** district passenger agent, has been promoted to division passenger agent, with headquarters as before at Columbia, S. C.

Charles S. Blackman, general freight agent of the Tennessee Central, has been promoted to the newly created position of traffic manager, with headquarters as before at Nashville, Tenn., and **C. S. Parrish,** assistant general freight agent at Nashville, has been advanced to general freight agent, succeeding Mr. Blackman.

Mr. Parrish was born on August 11, 1894, at Ashland City, Tenn., and entered railroad service on October 8, 1916, as a stenographer in the general freight office of the Tennessee Central at Nashville. In July, 1917, he was granted a leave of absence to enter military service, being stationed at Camp Sevier, Greenville, S. C. In 1919 he returned to the Tennessee Central general freight office at Nashville and in 1926 he was promoted to commercial agent with headquarters at Knoxville, Tenn. In 1933 Mr. Parrish was advanced to assistant general freight agent at Nashville, holding that position until his new promotion on January 1.

P. H. Cummings, manager of Air Express in the Central departments of the Railway Express Agency at Chicago, has been appointed air traffic executive, with headquarters at New York, succeeding **J. M. Shanaphy,** who has been appointed executive representative at New York. Mr. Shanaphy succeeds **John C. Emery,** now a lieutenant commander in the service of the United States Navy. Mr. Cummings, who has been active in the development and promotion of air express service since its inauguration sixteen years ago, had previously served the Agency as assistant general agent and later as superintendent of organization. Mr. Cummings has contributed much to the development and expanded use of air service, by itself, and in conjunction with rail express, in the Central region. In his new capacity he will direct and further develop air express transportation, particularly the co-ordination of air express and rail express, which extends the advantages of this highly expedited service to the 23,000 offices of the Express Agency not directly served by air.

Mr. Shanaphy, who was born at Newark, N. J., entered express service at San Francisco, Cal., and subsequently advanced through many departments of the Agency's service, more recently becoming identified with the transportation department. He served as special representative of the vice-president of traffic until his appointment as superintendent of transportation at Philadelphia, and in 1937 he went to New York as assistant to the vice-president of traffic. Mr. Shanaphy became air traffic executive in August, 1940, and remained in this capacity until his recent appointment to executive representative.

ENGINEERING & SIGNALING

G. S. Crites, division engineer of the Baltimore & Ohio at Punxsutawney, Pa., has been transferred to Baltimore, Md.

Thomas W. Hays, whose promotion to assistant general signal engineer of the Union Pacific was reported in the *Railway Age* of December 19, was born on September 7, 1891, at Ashland, Neb., and entered railroad service with the U. P., on October 29, 1912, as an interlocking repairman at Council Bluffs, Iowa. After serving in the Army from September, 1917, to February, 1919, he returned to the Union Pacific and held a number of positions at Omaha, Neb., and Green River, Wyo., until 1922, when he was advanced to signal supervisor of the Western division with headquarters at Green River. On September 10, 1931, he was transferred to the Kansas-Central division with headquarters at Kansas City, Mo., and to the Wyoming division on December 10, 1932, with headquarters at Cheyenne, Wyo. On March 1, 1941, Mr. Hays was promoted to assistant signal engineer of the South

T. W. Hays

Central district at Salt Lake City, Utah, and, five months later was advanced to signal engineer of the same district, holding that position until his new promotion, effective January 1.

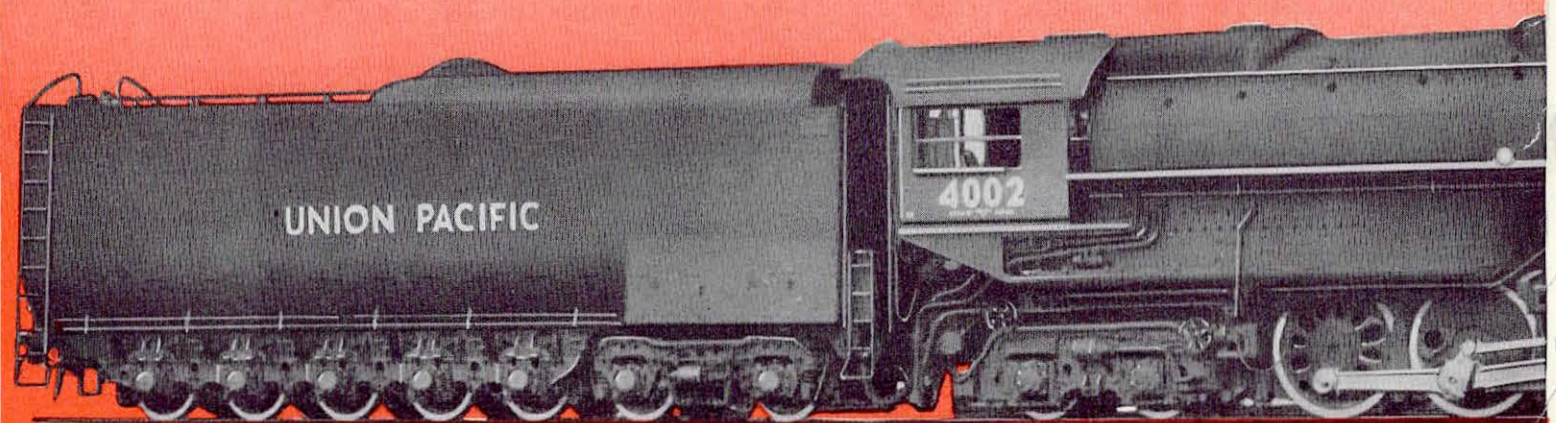
Joseph William Jones, assistant engineer of the Baltimore & Ohio, has been promoted to senior assistant engineer, with headquarters at Baltimore, Md. Mr. Jones, who was born on November 24, 1896, at Baltimore, Md., entered railroad service on October 18, 1917, as a chainman of the Baltimore & Ohio, and became rodman on August 1, 1918. Subsequently, Mr. Jones held the position of inspector from October 1, 1918, until March 1, 1919, when he was appointed engineering accountant. On May 15, 1922, he returned to the position of inspector and on July 1, 1923, became transitman, remaining in this position until

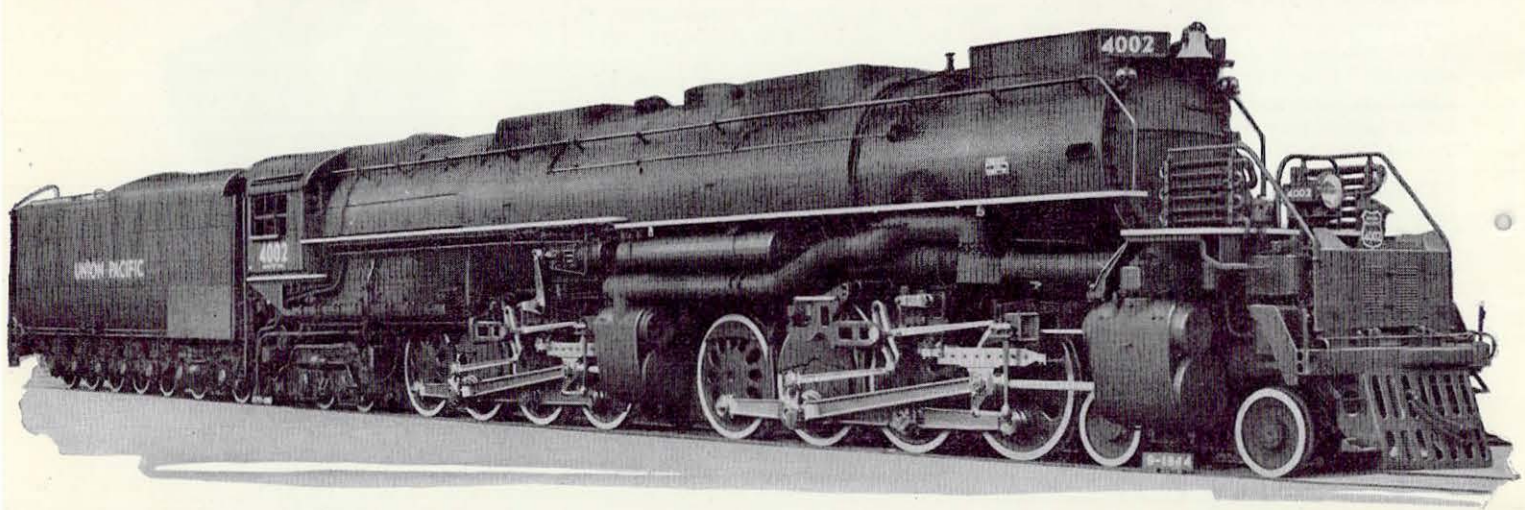
Joseph W. Jones

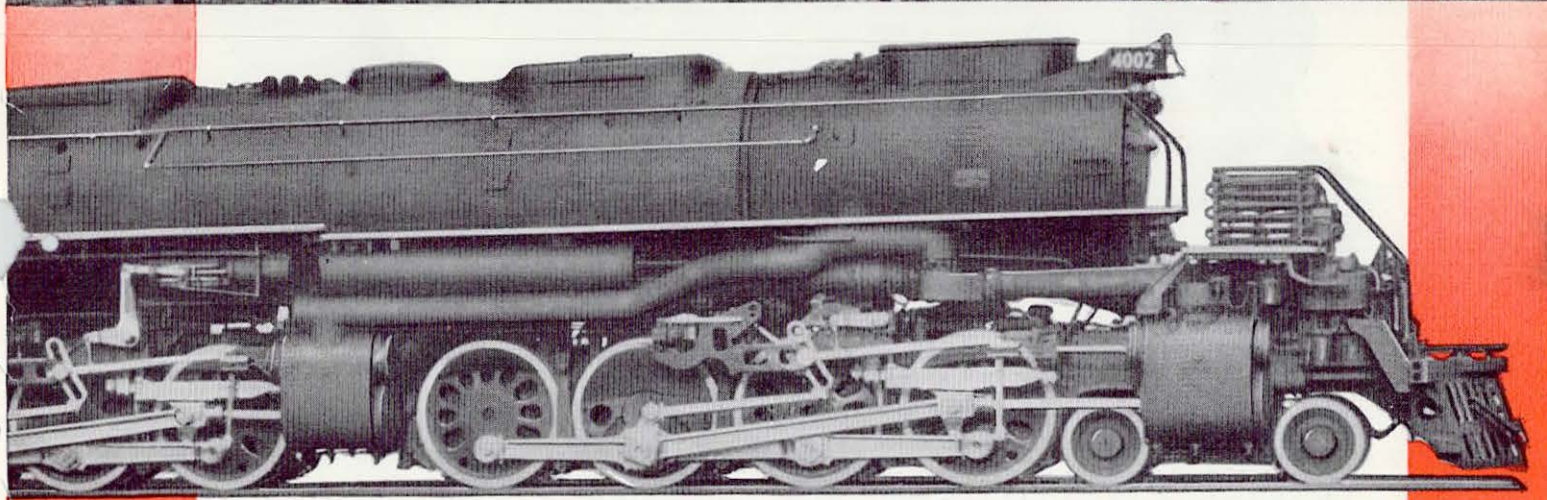
July 1, 1927, when he became field engineer. From May 1, 1932, to August 1, 1934, he was again employed as a transitman, and on the latter date returned to the position of field engineer, becoming resident engineer on October 1, 1935. On October 1, 1937, Mr. Jones was appointed

News Department continued on second left-hand page

"BIG BOY"







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Locomotive Characteristics

Weight on Drivers	540,000 lb.
Weight of Engine	762,000 lb.
Cylinders (Four)	23¾ x 32 ins.
Diameter of Drivers	68 ins.
Boiler Pressure	300 lb.
Tender Capacity—Fuel	28 tons
Tender Capacity—Water	24,000 gals.
Tractive Power	135,375 lb.

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assistant engineer, the position he was holding at the time of his recent promotion.

R. B. McArdle, whose promotion to signal engineer of the South-Central and Northwestern districts of the Union Pacific with headquarters at Salt Lake City was reported in the *Railway Age* of December 19, was born at Omaha, Neb., on December 5, 1887, and entered railroad service on August 1, 1906, on construction work between Omaha and Grand Island for the U. P. He was appointed signal maintainer on August 1, 1912, and promoted to assistant signal supervisor at Green River, Wyo., on August 1, 1913, being transferred to Cheyenne on July 1, 1917. He returned to Green River as signal supervisor on June 1, 1929, and on December 1, 1930, went to Sidney, Neb., as assistant signal supervisor. Mr. McArdle was advanced to signal supervisor at Pocatello, Idaho, on July 1, 1939, and transferred to Salt Lake City on August 1, 1941, holding that appointment until he was promoted to signal engineer on December 7, 1942.

William M. Young, assistant engineer of the Baltimore & Ohio, has been promoted to assistant to the chief engineer,

William M. Young

with headquarters at Baltimore, Md. Mr. Young was born on August 3, 1898, at Baltimore, Md., and was educated at the Baltimore Polytechnic Institute and Johns Hopkins university. He entered railroad service on September 1, 1916, as a chainman of the Baltimore & Ohio, becoming rodman on October 16, 1916. He was appointed levelman on May 1, 1917, and transitman on October 1, 1917. Subsequently Mr. Young became field engineer, and on March 1, 1929, was appointed assistant engineer, which position he held until his recent promotion.

PURCHASES AND STORES

Russell E. King, whose appointment as purchasing agent of the Delaware, Lackawanna & Western with headquarters at New York was announced in the *Railway Age* of December 26, entered the service of the Delaware, Lackawanna & Western as clerk in the purchasing department on December 24, 1906. He became chief clerk in October, 1910, and assistant to the purchasing agent in May, 1917. In 1935, Mr. King was appointed assistant to the gen-

Russell E. King

eral purchasing agent, which position he held until his recent appointment.

OBITUARY

H. A. Gallwey, general manager of the Butte, Anaconda & Pacific at Anaconda, Mont., died on December 26, at his home at Butte, Mont. He was 76 years old.

T. Hamilton, former engineer of motive power of the Pennsylvania at Philadelphia, Pa., who retired from that position in 1938, died on December 26, at his home at Chambersburg, Pa. He was 66 years old.

Edgar Palmer, vice-president and director of the Green Bay & Western, the Ahnapee & Western and the Kewanee, Green Bay & Western, and chairman of the board of the Chestnut Ridge, with headquarters at New York, died on January 9, at Princeton, N. J., at the age of 62.

Guy E. Bramon, retired general auditor of the Wabash, whose death was reported in the *Railway Age* of January 9, was born on August 9, 1875, at Ogden, Iowa. He entered railroad service in December, 1902, in the auditor's office of the Chicago, Burlington & Quincy at Omaha, Neb., holding several positions there until he was appointed chief clerk in 1909. One year later he was promoted to chief clerk to the auditor of expenditures at Chicago. In 1911 he became auditor of expenditures and, in March, 1913, was appointed assistant auditor of expenditures with headquarters at Chicago. Seven months later Mr. Bramon was named assistant auditor of freight accounts, being promoted to auditor of freight accounts in September, 1918, and to auditor of expenditures in September, 1921. He became general auditor for the Wabash in 1924, holding that position until his retirement in 1935.

Fred D. Fauser, general claims attorney of the Wabash, with headquarters at St. Louis, Mo., died on January 6 in a hospital in that city, two days after undergoing a major operation. Mr. Fauser was born at Philadelphia, Pa., on September 14, 1882, and entered railway service in October, 1897, as a machinist apprentice on the Rock Island & Peoria (now part of the Chicago, Rock Island & Pacific) at Peoria, Ill. In 1911 he entered the service of the Illinois Traction System (now the Illinois Terminal) at Peoria, serving as a claim adjuster until 1919 when he became engaged in similar work for the Terminal Railroad Association at St. Louis. While with the T. R. R. A. Mr. Fauser attended the Benton College of Law at St Louis and was admitted to the bar in 1924. He was appointed general claims agent of the Wabash on March 1, 1931, and in 1935 he was advanced to general claims attorney. Mr. Fauser was president of the Association of Railway Claim Agents in 1936-1937.

Otto Jabelmann, vice-president in charge of research and mechanical standards of the Union Pacific at Omaha, Neb., who died on January 6 in London, England, as reported in the *Railway Age* of January 9, was on a special mission abroad in connection with lease-lend distribution. He had journeyed to England at the re-

Otto Jabelmann

quest of W. A. Harriman, lease-lend expediter, who accompanied him. Mr. Jabelmann was born at Cheyenne, Wyo., on July 24, 1890, and entered railway service as a call boy for the Union Pacific on September 22, 1906. He has been continuously in the service of the Union Pacific since that time, with the exception of three years during which he attended the University of Michigan and a period from May to August, 1917, when he was a machinist on the Southern Pacific at San Francisco. He advanced through the mechanical department, serving successively as apprentice, machinist helper, machinist and assistant enginehouse foreman at Cheyenne, general foreman at Laramie, Wyo., machinist at North Platte, Neb., enginehouse foreman, district foreman and superintendent of shops at Cheyenne. On January 1, 1929, he was transferred to Omaha as superintendent of shops and in October, 1933, he was advanced to general superintendent of motive power and machinery at Omaha. He was appointed assistant to the president in charge of research in November, 1937. In June, 1939, Mr. Jabelmann was elected vice-president in charge of research and mechanical standards.

Table of Freight Operating Statistics appears on next left-hand page

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VICTORY can not be achieved without adequate transportation facilities. Locomotives must be kept in shape to keep troops and vital war materials moving to the front.

HUNT-SPILLER *Air Furnace* GUN IRON will help to keep your power on the road. Its wear-resisting properties will insure longer service from many vital parts, fewer repairs, greater availability and reduced machining costs.

HSGI Parts in the Valves and Cylinders also help to prevent the waste of power and fuel.

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Operating Statistics of Large Steam Railways—Selected

Region, road, and year	Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross excl. locos. & tenders	Ton-miles (*thousands*): Net-rev. and non-rev.	Road locos. on line: Serviceable: Unstored	Road locos. on line: Serviceable: Stored	Road locos. on line: B. O.	Road locos. on line: Per cent B. O.
New England Region:												
Boston & Albany.....1942	362	220,694	275,048	56,184	5,947	57.0	430,008	179,826	70	..	26	27.1
1941	362	165,386	178,759	16,748	4,082	66.8	240,277	92,760	67	3	17	19.5
Boston & Maine 1942	1,843	401,103	473,522	56,147	14,365	65.6	943,655	420,313	149	..	17	10.2
1941	1,894	352,815	404,154	39,023	13,370	69.6	772,900	309,633	145	7	22	12.6
N. Y., New H. & Hartr.†....1942	1,816	509,414	641,554	62,211	17,868	66.7	1,124,773	491,456	228	1	33	16.6
1941	1,819	442,839	555,451	42,078	17,326	70.7	942,338	379,782	210	..	48	22.8
Great Lakes Region:												
Delaware & Hudson.....1942	849	358,434	436,657	46,404	13,447	64.5	963,593	491,474	167	23	40	17.4
1941	849	338,007	399,123	43,256	12,757	65.6	852,175	412,377	133	28	79	32,9
Del., Lack. & Western.....1942	982	371,026	432,613	59,250	16,052	67.6	1,058,591	495,252	134	29	24	12.8
1941	983	399,566	456,028	61,144	16,432	73.1	962,822	418,813	142	16	44	21.8
Erie 1942	2,243	967,546	1,031,532	67,779	44,179	66.1	2,896,328	1,229,814	298	20	77	19.5
1941	2,252	944,363	1,002,016	68,811	44,184	69.1	2,686,827	1,062,166	280	25	110	26.5
Grand Trunk Western.....1942	1,026	289,816	293,466	2,056	8,689	64.4	572,081	242,960	67	3	14	16.7
1941	1,023	283,603	287,932	2,170	9,035	65.0	556,060	210,626	71	..	19	21.1
Lehigh Valley 1942	1,249	491,439	550,907	87,502	20,435	62.4	1,454,335	696,509	143	..	14	8.9
1941	1,251	431,809	469,155	72,357	17,617	69.1	1,111,053	502,185	127	16	41	22.3
New York Central.....1942	10,479	3,838,408	4,202,019	270,696	147,150	60.6	10,608,470	4,899,029	1,204	11	174	12.5
1941	10,519	3,475,129	3,731,528	225,961	127,334	63.0	8,569,911	3,788,900	1,098	86	222	15.8
New York, Chi. & St. L. 1942	1,657	873,430	887,917	10,992	33,375	64.5	2,255,333	1,017,708	168	..	14	7.7
1941	1,672	710,659	726,385	10,236	27,052	68.6	1,643,668	681,965	153	..	16	9.5
Pere Marquette 1942	2,016	457,048	474,120	11,015	14,224	66.1	967,507	450,303	138	3	22	13.5
1941	2,068	431,908	446,199	8,736	12,530	66.9	782,842	325,135	137	..	20	12.7
Pitts. & Lake Erie.....1942	233	103,818	107,954	26	4,479	64.4	392,772	234,873	43	8	6	10.5
1941	232	107,026	110,214	20	4,749	62.6	406,484	234,566	45	..	14	23.7
Wabash 1942	2,381	851,794	877,951	19,577	30,448	64.7	2,035,480	910,251	184	6	36	15.9
1941	2,397	660,139	674,128	14,185	23,552	72.0	1,360,800	543,412	141	29	87	33.9
Central Eastern Region:												
Baltimore & Ohio.....1942	6,213	2,420,307	3,023,089	334,029	82,428	62.9	5,942,909	2,871,679	926	7	189	16.8
1941	6,245	2,198,603	2,766,832	303,808	73,312	62.5	5,147,762	2,396,064	870	50	210	18.6
Central of New Jersey†.....1942	660	260,659	301,442	65,591	8,524	58.9	640,804	319,081	133	14	16	9.8
1941	661	222,939	250,605	48,225	7,083	63.9	489,675	241,490	89	17	38	26.4
Chicago & Eastern Ill. 1942	913	229,649	237,213	6,417	7,297	65.7	491,353	230,570	59	..	11	15.7
1941	925	193,443	194,688	3,435	5,491	69.5	342,876	155,155	62	6	20	22.7
Elgin, Joliet & Eastern.....1942	392	153,500	155,803	1,457	4,259	64.1	334,314	178,879	71	..	6	7.8
1941	390	138,311	140,242	1,667	3,909	61.0	302,388	153,945	67	..	11	14.1
Long Island 1942	374	40,591	42,294	21,566	473	53.0	36,468	14,132	49	..	3	5.8
1941	375	30,996	32,392	19,767	322	52.4	24,096	8,940	37	7	4	8.3
Pennsylvania System 1942	9,938	5,160,766	6,095,914	797,204	194,353	61.3	14,183,740	6,792,935	1,999	3	119	5.6
1941	9,953	4,381,056	5,164,279	639,555	171,499	64.0	11,832,351	5,563,011	1,828	60	250	11.7
Reading 1942	1,419	627,139	704,745	90,153	19,950	63.3	1,530,332	818,778	283	6	32	10.0
1941	1,430	567,102	630,940	79,943	17,821	65.6	1,271,662	653,752	252	22	60	18.0
Pocahontas Region:												
Chesapeake & Ohio 1942	3,034	1,126,079	1,210,027	59,256	51,587	56.2	4,489,053	2,502,993	439	3	69	13.5
1941	3,053	1,097,788	1,166,572	50,476	53,045	56.5	4,538,496	2,503,404	396	18	69	14.3
Norfolk & Western.....1942	2,137	864,719	926,484	66,558	38,571	57.7	3,339,984	1,786,884	315	10	20	5.8
1941	2,163	825,075	870,203	49,846	39,000	58.4	3,318,931	1,788,031	301	13	23	6.8
Southern Region:												
Atlantic Coast Line.....1942	4,984	917,344	944,785	12,306	24,484	65.7	1,618,753	735,691	339	16	17	4.6
1941	5,043	709,972	724,732	10,477	17,414	65.4	1,085,532	453,252	271	24	45	13.2
Central of Georgia†.....1942	1,783	353,043	360,143	6,128	8,679	69.5	554,199	250,912	108	..	10	8.5
1941	1,783	328,477	333,135	5,425	7,768	71.8	460,772	196,819	101	..	17	14.4
Gulf, Mobile & Ohio.....1942	1,959	391,850	492,882	6,739	13,229	69.4	854,334	411,011	116	..	6	4.9
1941	1,962	285,695	332,506	3,444	9,438	71.1	565,410	248,530	97	..	10	9.3
Illinois Central (incl. 1942	6,378	1,873,797	1,888,700	37,779	67,732	62.1	4,828,789	2,258,864	643	..	54	7.7
Yazoo & Miss. Vy.) 1941	6,521	1,655,454	1,664,515	29,151	52,817	64.2	3,466,099	1,519,667	591	44	92	12.7
Louisville & Nashville.....1942	4,741	1,662,217	1,820,283	49,264	41,511	61.5	3,071,802	1,561,125	427	1	55	11.4
1941	4,794	1,530,637	1,658,010	42,964	38,847	60.5	2,795,797	1,371,086	353	61	55	1.7
Seaboard Air Line*.....1942	4,219	926,495	1,041,433	12,516	24,334	66.3	1,630,789	747,277	285	..	22	7.2
1941	4,295	766,784	820,948	7,302	19,511	64.8	1,240,248	531,387	262	1	43	14.1
Southern 1942	6,469	2,234,458	2,284,234	33,328	49,579	66.5	3,224,092	1,444,509	585	..	85	12.7
1941	6,474	1,926,916	1,967,859	28,264	44,075	66.6	2,675,045	1,133,220	561	..	106	15.9
Northwestern Region:												
Chi. & North Western†.....1942	8,122	1,176,579	1,233,898	26,477	38,005	64.9	2,591,745	1,197,158	385	30	108	20.7
1941	8,280	1,123,457	1,164,130	23,755	35,832	64.0	2,313,243	949,548	363	14	195	34.1
Chicago Great Western.....1942	1,447	305,848	312,767	8,321	9,712	67.4	634,580	270,558	75	..	11	12.8
1941	1,447	302,284	306,167	11,448	9,726	66.3	600,149	231,490	70	1	12	14.5
Chi., Milw., St. P. & Pac.†..1942	10,813	1,711,599	1,810,281	78,705	56,259	66.6	3,799,774	1,772,469	517	37	73	11.6
1941	10,813	1,610,288	1,676,137	61,355	49,938	63.3	3,256,302	1,379,133	506	30	94	14.9
Chi., St. P., Minneap. & Om..1942	1,618	252,071	273,188	13,205	6,578	67.8	433,661	196,162	111	6	15	11.4
1941	1,618	250,451	265,584	12,648	6,461	67.2	402,214	166,345	116	6	12	9.0
Duluth, Missabe & I. R. 1942	546	183,547	184,506	2,094	9,106	50.6	815,419	494,533	57	1	2	3.3
1941	541	134,218	134,935	1,417	7,512	51.4	657,368	397,597	48	..	4	7.7
Great Northern 1942	8,022	1,414,178	1,420,018	43,530	54,437	65.4	3,934,095	1,901,411	432	10	45	9.2
1941	7,979	1,311,982	1,314,640	41,604	47,956	60.1	3,459,427	1,526,352	383	19	97	19.4
Minneap., St. P. & S. St. M.†.1942	4,258	501,737	513,913	9,049	13,600	63.8	933,138	430,671	140	2	6	4.1
1941	4,251	496,943	508,793	7,772	12,735	66.5	829,749	371,134	133	..	8	5.7
Northern Pacific 1942	6,586	1,061,984	1,133,593	82,122	41,780	73.6	2,759,433	1,376,252	387	11	47	10.6
1941	6,593	988,069	1,048,417	70,333	36,499	70.7	2,349,828	1,050,559	369	6	57	13.2
Central Western Region:												
Alton 1942	915	300,417	327,045	1,685	8,625	70.3	556,378	250,372	72	..	6	7.7
1941	915	233,254	261,002	1,242	5,755	64.9	366,700	150,729	69	2	6	7.8
Atch., Top. & S. Fe (incl. 1942	13,169	3,376,933	3,703,541	229,530	113,135	67.2	7,529,648	2,929,089	833	..	87	9.5
G. C. & S. F. & P. & S. F.).1941	13,431	3,029,773	3,323,978	201,039	92,234	63.6	6,006,434	2,096,576	743	22	129	14.4
Chi., Burl. & Quincy.....1942	8,857	1,633,958	1,720,311	70,308	56,670	66.2	3,809,796	1,781,947	508	..	33	6.1
1941	8,923	1,505,148	1,558,168	51,520	47,374	64.8	2,984,582	1,232,088	434	10	92	17.2
Chi., Rock I. & Pac.†.....1942	7,815	1,476,637	1,546,183	17,620	41,647	66.9	2,748,721	1,202,468	383	2	87	18.4
1941	7,917	1,291,207	1,323,956	13,292	35,167	65.8	2,188,760	899,482	353	6	132	26.9
Denver & R. G. Wn.†.....1942	2,405	559,949	666,305	109,301	18,847	75.8	1,164,608	553,768	194	..	21	9.8
1941	2,422	530,923	603,243	78,559	14,379	67.0	906,047	381,318	177	7	16	8.0
Southern Pacific—Pac. Lines.1942	8,290	2,402,498	2,724,987	387,083	97,108	68.5	6,375,672	2,722,612	841	17	85	9.0
1941	8,496	2,275,626	2,546,077	365,220	85,850	65.3	5,572,286	2,187,751	769	5	99	11.3
Union Pacific 1942	9,846	3,257,100	3,416,298	247,010	115,433	67.4	7,529,572	3,232,339	859	..	39	4.3
1941	9,872	3,338,399	3,453,447	198,931	99,842	64.7	6,251,273	2,357,587	763	11	93	10.7
Southwestern Region:												
Mo.-Kans.-Texas Lines.....1942	3,281	719,094	737,583	12,411	21,050	70.0	1,312,995	602,883	150	..	20	11.8
1941	3,281	488,808	495,591	8,245	13,336	66.4	804,539	314,662	96	..	82	46.1
Missouri Pacific†.....1942	7,086	2,020,391	2,125,957	51,581	66,078	62.8	4,619,748	2,086,943	511	1	55	9.7
1941	7,110	1,439,998	1,490,533	29,690	44,956	67.5	2,845,553	1,216,362	428	12	63	12.5
Texas & Pacific.....1942	1,901	398,228	398,228	4,893	12,232	65.4	823,087	340,204	118	8	16	11.3
1941	1,891	308,965	308,965	2,075	10,447	67.7	641,676	250,940	88	19	80	42.8
St. Louis-San Francisco†....1942	4,640	1,076,571	1,156,613	23,533	26,848	65.0	1,798,767	789,412	324	..	26	7.4
1941	4,730	872,367	896,914	16,286	20,767	65.1	1,301,093	535,688	287	9	28	8.6
St. Louis-San Fran. & Texas.1942	159	32,894	34,572	36	523	67,9	34,521	14,486	8	..	2	20.0
1941	159	29,649	30,250	44	478	65.0	28,848	11,201	10	1	1	8.3
St. Louis Southw. Lines†....1942	1,600	527,210	531,321	6,704	17,306	66.1	1,111,428	476,087	114	2	14	10.8
1941	1,600	376,451	380,283	4,852	11,749	74.9	670,965	288,683	92	8	23	18.7
Texas & New Orleans.....1942	4,339	1,141,954	1,151,038	36,247	31,554	64.7	2,121,223	930,853	255	1	16	5.9
1941	4,415	847,099	847,243	7,624	22,653	69.1	1,432,504	612,759	231	16	18	6.8

* Report of receivers.
† Report of trustee or trustees.

Items for the Month of October, 1942, Compared With October, 1941

Region, road, and year	Freight cars on line: Home	Foreign	Total	Per Cent B. O.	G.t.m. per train-hr. excl. locos. and tenders	G.t.m. per train-mi. excl. locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd. car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Coal lb. per 1000 g.t.m. inc. loco.	Mi. per loco. per day
New England Region:													
Boston & Albany	1942 410	6,602	7,012	0.3	30,748	1,958	819	30.2	836	48.5	16,024	138	122.3
	1941 638	5,108	5,746	.8	24,669	1,471	568	22.7	537	35.4	8,266	142	78.7
Boston & Maine	1942 3,064	11,229	14,293	1.9	34,522	2,364	1,053	29.3	990	51.5	7,357	92	107.1
	1941 3,228	10,814	14,042	2.7	30,832	2,198	880	23.2	697	43.3	5,274	91	88.2
N. Y., New H. & Hartr.†	1942 4,189	17,225	21,414	.9	31,856	2,247	982	27.5	713	38.8	8,730	96	90.8
	1941 4,132	18,132	22,264	2.4	30,359	2,158	870	21.9	554	35.7	6,735	98	82.3
Great Lakes Region:													
Delaware & Hudson	1942 6,139	4,993	11,132	4.2	43,220	2,705	1,380	36.5	1,385	58.7	18,674	100	73.5
	1941 6,054	5,895	11,949	3.4	39,207	2,539	1,229	32.3	1,119	52.7	15,668	101	63.0
Del., Lack. & Western	1942 7,345	9,628	16,973	2.9	47,275	2,884	1,349	30.9	924	44.3	16,269	108	88.4
	1941 6,718	10,364	17,082	3.4	41,973	2,435	1,059	25.5	794	42.7	13,744	120	86.5
Erie	1942 12,684	22,002	34,686	2.1	51,723	3,009	1,278	27.8	1,124	61.1	17,687	88	96.5
	1941 10,070	24,666	34,736	2.2	49,883	2,867	1,134	24.0	1,004	60.5	15,215	89	91.1
Grand Trunk Western	1942 2,359	6,087	8,446	3.5	41,210	1,981	841	28.0	865	48.0	7,639	81	123.4
	1941 3,195	8,793	11,988	3.4	36,344	1,974	748	23.3	582	38.4	6,642	83	115.2
Lehigh Valley	1942 8,376	17,297	25,673	1.5	49,519	3,052	1,462	34.1	819	38.5	17,989	110	139.2
	1941 5,589	14,778	20,367	1.0	48,995	2,624	1,186	28.5	809	41.1	12,949	102	100.3
New York Central	1942 51,928	88,550	140,478	2.6	44,411	2,797	1,292	33.3	1,116	55.3	15,081	91	114.1
	1941 62,097	82,884	144,981	6.2	40,822	2,490	1,101	29.8	849	45.3	11,619	96	102.3
New York, Chi. & St. L.	1942 3,966	13,576	17,542	1.7	47,506	2,590	1,169	30.5	1,865	94.9	19,812	82	168.0
	1941 4,203	12,392	16,595	1.9	42,095	2,316	961	25.2	1,328	76.8	13,157	85	151.5
Pere Marquette	1942 3,724	8,066	11,790	2.1	36,918	2,134	996	31.7	1,261	60.2	7,205	85	104.0
	1941 5,384	9,001	14,385	2.6	31,097	1,825	758	25.9	733	42.2	5,072	91	103.0
Pitts. & Lake Erie	1942 4,150	7,442	11,592	5.7	50,576	3,786	2,264	52.4	581	17.2	32,517	80	67.3
	1941 5,113	8,885	13,998	10.2	48,652	3,803	2,195	49.4	535	17.3	32,615	75	64.2
Wabash	1942 8,334	14,595	22,929	1.0	43,687	2,424	1,084	29.9	1,245	64.4	12,332	104	133.8
	1941 8,156	11,292	19,448	1.4	41,388	2,079	830	23.1	873	52.6	7,313	104	90.2
Central Eastern Region:													
Baltimore & Ohio	1942 42,425	53,062	95,487	2.3	31,236	2,507	1,211	34.8	988	45.1	14,910	132	100.3
	1941 44,790	44,745	89,535	2.5	31,227	2,382	1,109	32.7	872	42.7	12,377	135	92.2
Central of New Jersey†	1942 7,863	16,117	23,980	1.0	29,880	2,498	1,244	37.4	429	19.5	15,595	131	97.3
	1941 5,076	18,711	23,787	2.4	29,572	2,275	1,122	34.1	341	15.6	11,785	129	86.9
Chicago & Eastern Ill.	1942 1,506	4,174	5,680	1.9	34,870	2,221	1,042	31.6	1,265	60.9	8,146	113	117.5
	1941 2,371	3,473	5,844	4.4	31,013	1,785	808	28.3	812	41.4	5,411	118	76.8
Elgin, Joliet & Eastern	1942 7,879	8,615	16,494	2.9	18,155	2,258	1,208	42.0	360	13.4	14,720	127	95.6
	1941 8,904	8,283	17,187	2.4	17,577	2,234	1,138	39.4	289	12.0	12,733	113	88.4
Long Island	1942 19	3,926	3,945	.4	7,485	912	354	29.9	116	7.3	1,219	301	56.4
	1941 57	3,833	3,890	.4	5,610	793	294	27.8	74	5.1	769	312	49.8
Pennsylvania System	1942 130,095	117,957	248,052	2.6	37,217	2,819	1,350	35.0	879	41.1	22,049	112	112.3
	1941 145,051	100,346	245,397	6.8	37,934	2,769	1,302	32.4	741	35.7	18,030	104	95.9
Reading	1942 16,926	18,924	35,850	3.4	30,528	2,447	1,309	41.0	739	28.5	18,613	117	89.3
	1941 15,041	21,295	36,336	7.0	28,100	2,250	1,157	36.7	585	24.3	14,747	128	81.5
Pocahontas Region:													
Chesapeake & Ohio	1942 36,187	16,120	52,307	1.4	56,577	4,057	2,262	48.5	1,550	56.8	26,612	70	88.3
	1941 40,059	16,083	56,142	1.1	57,977	4,173	2,302	47.2	1,461	54.8	26,451	67	89.1
Norfolk & Western	1942 29,763	8,783	38,546	1.3	58,708	3,932	2,103	46.3	1,495	55.9	26,973	88	101.0
	1941 30,940	7,243	38,183	1.6	62,928	4,086	2,201	45.8	1,514	56.5	26,666	81	95.8
Southern Region:													
Atlantic Coast Line	1942 9,130	16,890	26,020	2.8	28,873	1,767	803	30.0	911	46.2	4,762	106	89.7
	1941 10,567	10,635	21,202	5.5	25,564	1,533	640	26.0	715	41.9	2,899	106	75.7
Central of Georgia†	1942 2,249	6,719	8,968	.9	28,035	1,585	718	28.9	848	42.2	4,540	115	107.2
	1941 2,991	5,953	8,944	.6	26,960	1,414	604	25.3	691	38.0	3,561	117	100.5
Gulf, Mobile & Ohio	1942 2,537	7,425	9,962	1.0	38,181	2,197	1,057	31.1	1,318	61.1	6,768	113	138.0
	1941 2,898	5,509	8,407	1.8	35,325	1,988	874	26.3	1,001	53.4	4,086	105	105.8
Illinois Central (incl. Yazoo & Miss. Vy.)	1942 19,459	34,802	54,261	1.1	38,948	2,620	1,226	33.4	1,335	64.5	11,425	109	96.0
	1941 25,799	24,906	50,705	1.1	33,545	2,129	933	28.8	967	52.3	7,517	119	81.2
Louisville & Nashville	1942 29,468	16,398	45,866	1.3	27,613	1,848	939	37.6	1,074	46.4	10,622	122	129.9
	1941 31,788	13,698	45,486	2.0	28,172	1,831	898	35.3	977	45.8	9,226	114	123.8
Seaboard Air Line*	1942 8,256	17,122	25,378	1.8	28,079	1,806	827	30.7	959	47.1	5,714	117	121.6
	1941 9,397	12,117	21,514	2.4	27,233	1,631	699	27.2	832	47.2	3,991	119	97.8
Southern	1942 17,978	27,254	45,232	2.0	24,053	1,463	656	29.1	1,024	52.9	7,203	141	116.7
	1941 18,899	25,686	44,585	4.3	23,416	1,405	595	25.7	844	49.3	5,646	137	102.6
Northwestern Region:													
Chi. & North Western†	1942 23,360	31,772	55,132	3.4	33,796	2,274	1,050	31.5	693	33.9	4,755	113	81.7
	1941 28,147	26,795	54,942	6.0	30,921	2,123	872	26.5	553	32.6	3,699	118	72.6
Chicago Great Western	1942 1,375	4,104	5,479	1.0	36,664	2,084	888	27.9	1,545	82.3	6,032	114	126.3
	1941 1,499	4,518	6,017	1.0	36,351	1,989	767	23.8	1,204	76.3	5,160	111	130.7
Chi., Milw., St. P. & Pac.†	1942 26,554	25,885	52,439	1.2	35,272	2,234	1,042	31.5	1,065	50.7	5,288	112	105.8
	1941 33,510	24,238	57,748	1.2	32,636	2,032	860	27.6	769	44.0	4,114	113	98.2
Chi., St. P., Minneap. & Om.	1942 1,475	7,632	9,107	5.4	23,606	1,770	801	29.8	685	33.9	3,911	105	72.9
	1941 2,035	6,976	9,011	3.5	21,835	1,630	674	25.7	577	33.4	3,316	109	70.4
Duluth, Missabe & I. R.	1942 14,098	494	14,592	2.4	73,541	4,551	2,760	54.3	1,114	40.5	29,217	61	119.0
	1941 13,101	455	13,556	1.2	81,066	5,049	3,054	52.9	943	34.7	23,707	61	95.5
Great Northern	1942 25,839	23,078	48,917	1.7	41,054	2,807	1,357	34.9	1,222	53.5	7,646	91	105.6
	1941 27,345	18,691	46,036	2.2	40,142	2,656	1,172	31.8	1,030	53.8	6,171	95	95.2
Minneap., St. P. & S. St. M.†	1942 8,200	6,015	14,215	2.4	31,487	1,866	861	31.7	916	45.4	3,263	93	113.5
	1941 10,079	5,524	15,603	2.5	28,619	1,674	749	29.1	755	38.9	2,816	92	120.9
Northern Pacific	1942 19,423	15,476	34,899	2.9	39,765	2,610	1,302	32.9	1,265	52.2	6,741	119	96.0
	1941 23,769	9,909	33,678	4.9	38,114	2,396	1,071	28.8	967	47.5	5,140	119	91.5
Central Western Region:													
Alton	1942 936	6,592	7,528	4.4	41,216	1,864	839	29.0	1,115	54.7	8,827	117	143.0
	1941 913	5,895	6,808	2.9	38,008	1,578	649	26.2	697	41.0	5,314	136	115.0
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.)	1942 49,647	41,045	90,512	2.5	37,840	2,240	871	25.9	1,044	60.0	7,175	114	143.7
	1941 52,928	21,210	74,138	3.9	38,492	1,990	694	22.7	911	63.1	5,035	115	134.8
Chi., Burl. & Quincy	1942 17,675	27,036	44,711	1.9	37,313	2,346	1,097	31.4	1,340	64.4	6,490	108	115.2
	1941 20,571	20,368	40,939	2.1	34,136	1,992	822	26.0	916	54.3	4,454	107	102.0
Chi., Rock I. & Pac.†	1942 11,030	16,909	27,939	3.5	33,138	1,871	819	28.9	1,337	69.2	4,963	111	113.7
	1941 14,894	15,816	30,710	2.7	31,300	1,702	699	25.6	954	56.7	3,665	109	93.5
Denver & R. G. Wn.†	1942 8,497	10,531	19,028	1.8	27,797	2,094	996	29.4	976	43.8	7,428	173	126.5
	1941 8,886	6,139	15,025	2.4	27,341	1,714	721	26.5	830	46.8	5,079	164	119.7
Southern Pacific—Pac. Lines	1942 27,919	62,586	90,505	1.9	33,498	2,678	1,143	28.0	1,018	53.0	10,594	105	113.0
	1941 27,391	44,821	72,212	2.1	34,498	2,468	969	25.5	985	58.9	8,307	101	114.5
Union Pacific	1942 30,701	47,871	78,572	1.9	40,013	2,336	1,003	28.0	1,380	73.2	10,590	122	138.2
	1941 32,103	37,316	69,419	3.9	38,607	1,893	714	23.6	1,085	71.0	7,704	125	143.0
Southwestern Region:													
Mo.-Kans.-Texas Lines	1942 3,942	8,446	12,388	2.6	32,283	1,844	847	28.6	1,633	81.5	5,927	82	148.5
	1941 4,697	5,996	10,693	11.8	30,996	1,656	648	23.6	944	60.2	3,094	82	98.3
Missouri Pacific†	1942 10,648	39,732	50,380	1.1	32,539	2,297	1,038	31.6	1,304	65.7	9,501	110	132.6
	1941 12,306	29,356	41,662	1.3	34,575	1,990	851	27.1	933	51.1	5,519	111	105.8
Texas & Pacific	1942 3,121	6,355	9,476	0.7	35,498	2,091	864	27.8	1,195	65.7	5,773	93	97.1
	1941 2,696	5,888	8,584	1.6	37,426	2,081	814	24.0	943	58.0	4,281	84	58.1
St. Louis-San Francisco†	1942 9,070	12,371	21,441	2.9	31,771	1,682	738	29.4	1,207	63.1	5,488	126	116.4
	1941 11,591	9,213	20,804	3.0	29,590	1,501	618	25.8	843	50.2	3,653	120	97.5
St. Louis-San Fran. & Texas	1942 ..	317	317	10.1	18,721	1,059	444	27.7	1,587	84.3	2,939	130	104.9
	1941 ..	390	390	2.6	20,709	973	378	23.4	985	64.6	2,272	133	76.8
St. Louis Southw. Lines†	1942 1,670	6,941	8,611	0.7	31,446	2,126	911	27.5	1,709	94.0	9,599	82	140.0
	1941 1,638	4,271	5,909	1.1	34,948	1,790	770	24.6	1,535	83.5	5,820	80	106.7
Texas & New Orleans	1942 3,778	20,229	24,007	1.3	30,760	1,883	826	29.5	1,206	63.2	6,920	84	149.6
	1941 4,490	12,689	17,179	2.7	32,517	1,710	732	27.0	1,131	60.6	4,477	82	109.4

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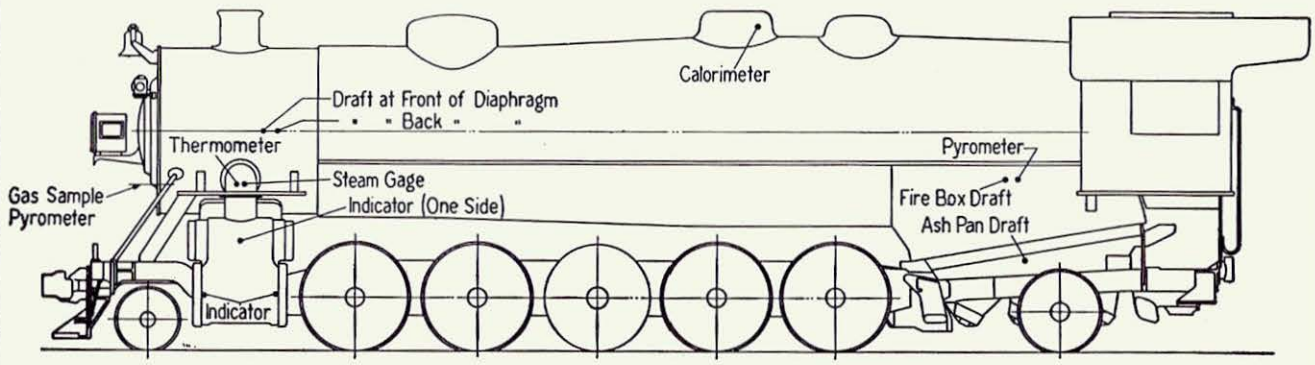
Chief Engineer, The Baldwin Locomotive Works



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The author is a recognized authority on locomotive design, construction and testing. His experience in testing locomotives here and abroad with the aid of dynamometer cars is drawn upon for interesting observations on road testing methods.

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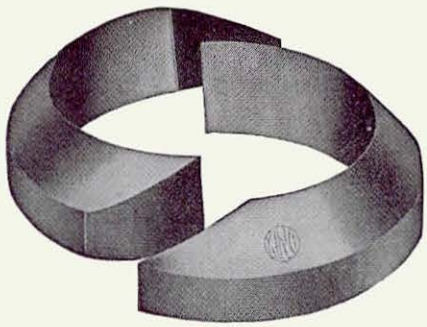

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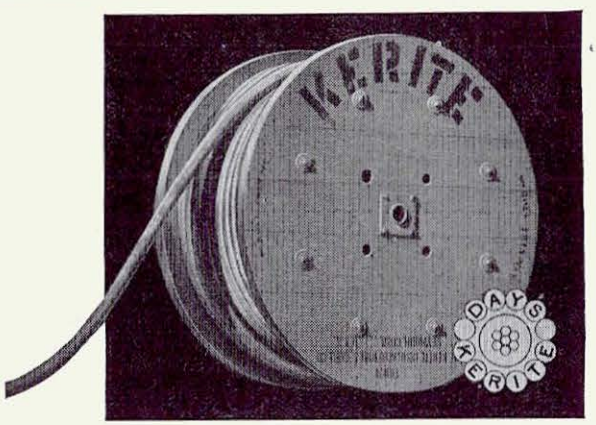

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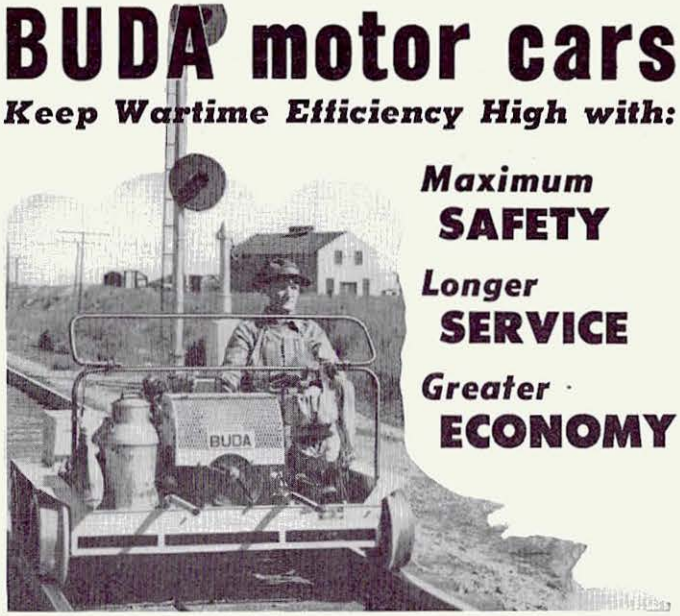

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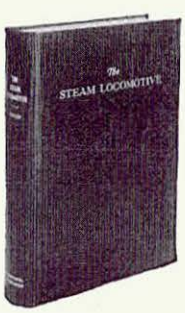

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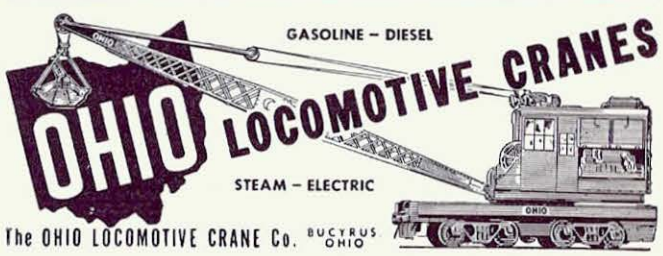

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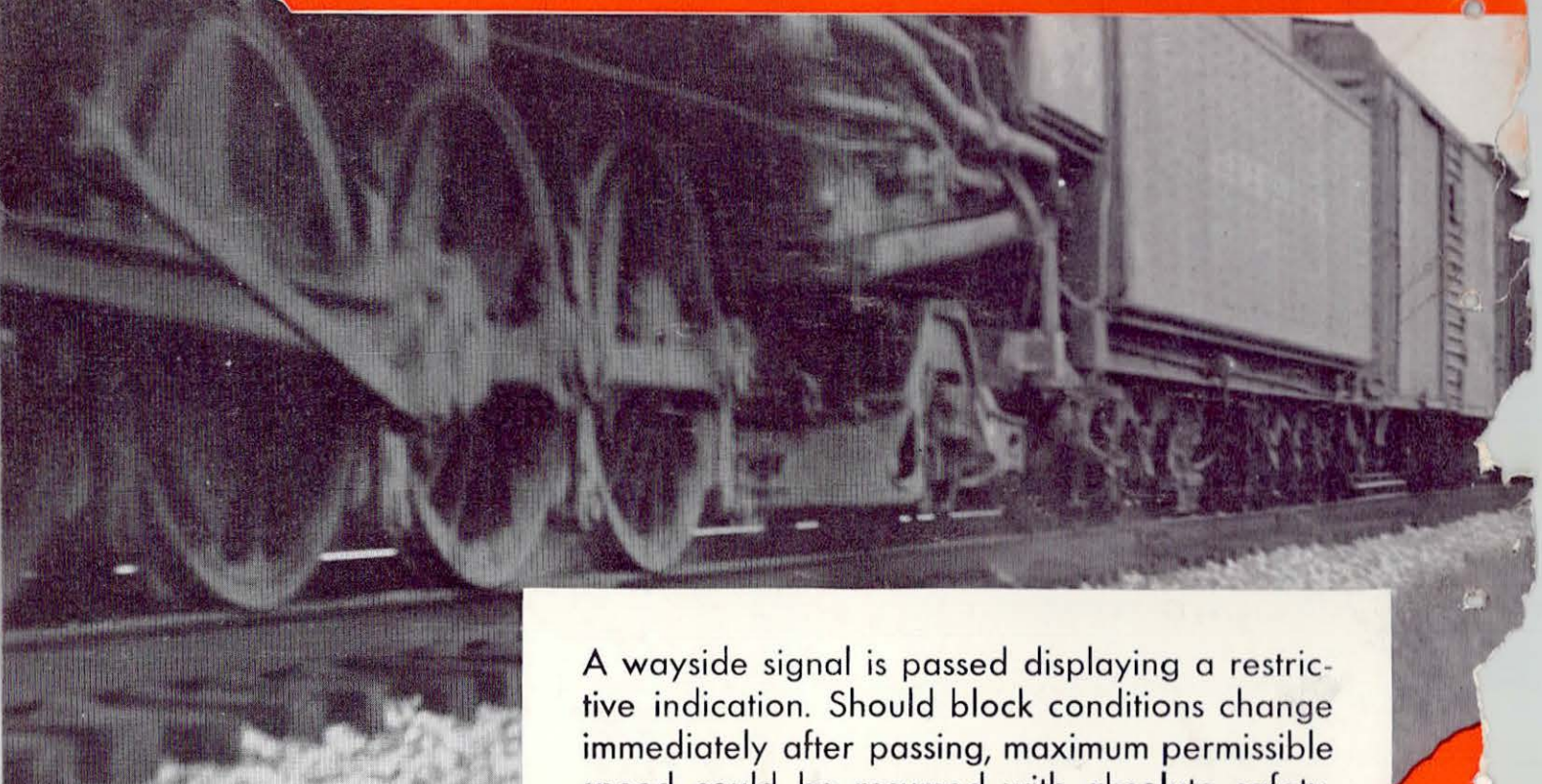

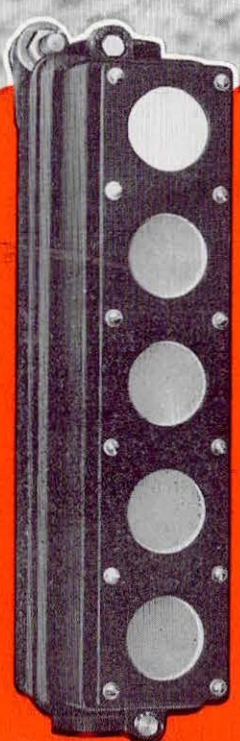

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